

AN A. G. R A M M A R
OF
GENERAL GEOGRAPHY.

for the use of

Schools and Young Persons

WITH

MAPS & ENGRAVINGS

BY THE

Rev^d. J. Goldsmith.

Revised, corrected & greatly enlarged

BY

EDWARD HUGHES, F.R.G.S. &c.

HEAD MASTER OF THE ROYAL NAVAL LOWER SCHOOL,

Greenwich Hospital.



L O N D O N.

Longman, Green, Longman and Roberts

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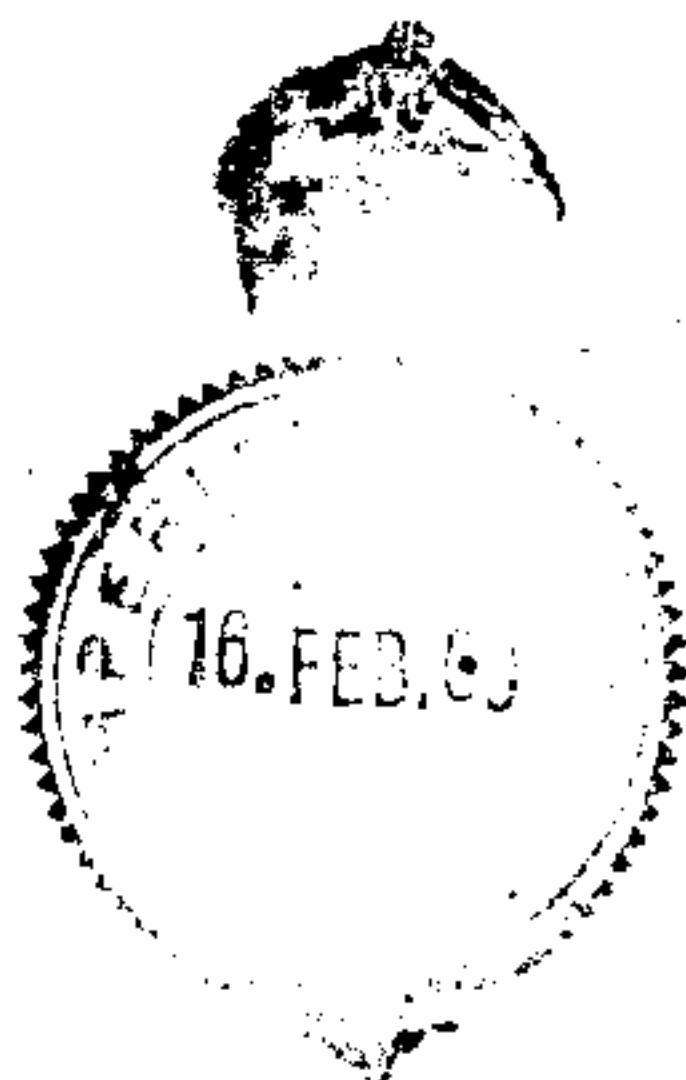


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P R E F A C E.

THE present Edition of this popular school book has been prepared with the greatest care to satisfy the requirements of modern Education. In order to keep pace with the improved state of geographical knowledge, and the method of imparting it, the whole work has been revised, re-arranged, and expanded. Countries to which political changes or the progress of civilisation has given increased interest and importance, have been brought prominently forward, and their social and political condition described from the most recent information. The Physical Geography of each of the great Continents and of the Globe has been added. To this subject particular attention is directed, as it must form the basis of all intelligent instruction in Geography. The section on Astronomy has been for the most part rewritten—especially Diurnal Astronomy, — and, it is hoped, simplified by illustrations employed by the Editor in teaching this important subject. Remarkable places not mentioned in the text of the work, will be found in the Gazetteer. The Maps combine accuracy with beauty of execution; and the places are marked with strict regard to their importance, so as to convey the most useful information without confusion. Finally, an inspection of the work will show that the publishers are resolved to maintain for it the high reputation which it has for a series of years maintained as a compendious manual of practical instruction in Geography.

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GOLDSMITH'S

GRAMMAR OF GEOGRAPHY.

1. GEOGRAPHY signifies a description of the surface of the earth. It has been divided into three branches; namely, Astronomical, Physical, and Political.

2. *Astronomical Geography* regards the earth as a planet, and treats of its form, magnitude, and motions, and the positions of places upon its surface.

3. *Physical Geography* comprises a knowledge of the composition and distribution of the solid parts of the earth's surface; of the rivers, lakes, and ocean-waters; of the atmosphere by which it is surrounded, and of all animal and vegetable life.

4. *Political Geography* treats of the various states and governments into which the earth has been divided by man, and of all matters relating to man as a social being.

FORM AND SIZE OF THE EARTH.

5. The form of the earth is that of a vast globe or round body, resembling in shape a ball, or, more correctly speaking, an orange.

6. The following facts render it evident that the earth must be a round body in every direction.

7. When we stand on the sea-shore and look at a ship far out at sea, we observe that the water is elevated between our eyes and the ship, so as to prevent our seeing the whole of her at once. At first we can only get sight of the topsails, but as she approaches the land, her lower sails and hull come distinctly into view. On the contrary, if she is receding from the shore, she seems gradually to

sink as it were behind the convexity of the waters. Persons on ship-board, too, as they near the land, first see the mountain-tops, and then their bases; and if the ship is sailing from the shore, the bases of the mountains are gradually lost sight of, and lastly their summits. Now these appearances are produced by the curved surface of the earth coming between the eye and the object.

8. If we ascend any high object, as a tower or a mountain, a greater extent of the earth's surface becomes visible to us: it is for this reason that sailors climb to the mast-head to look out for land. Persons who ascend in balloons see a larger portion of the earth than we can, because, from their elevated position, they are enabled to look over more of its curved surface.

9. When we travel to any considerable distance from North to South, or from South to North, new stars come into view in the direction in which we are advancing, and they gradually disappear in the quarter from which we are receding. This could not possibly happen if the earth were a flat body in the direction of North and South.

10. The rotundity of the earth in the direction of East and West is proved by the fact, that navigators have sailed constantly East or West (as nearly as the form of the different continents will permit) and returned to the place from which they set out. Magelhaens, Drake, and Anson, were among the first who sailed round or *circumnavigated* the globe; but the voyage is now so often performed that it is considered nothing extraordinary.

11. All these proofs are confirmed and illustrated by eclipses of the moon. Lunar eclipses take place in consequence of the earth coming between the sun and the moon, in which case the moon enters the large cone of darkness or shadow which is projected by the earth. This shadow is found upon the face of the moon in all cases, and in every position of the earth, to be of a circular figure; therefore the earth, which casts this shadow, must be round in every direction, or of a globular form.

12. If the earth, instead of being round in all directions,

was merely a flat circular body like the top of a round table, the shadow thrown from it on the moon would at one time or other present the appearance of an oval, of a straight line, or some other figure different from that which it has always been found to assume. These facts prove that the whole mass of land and water, of which the earth is composed, is nearly of a spherical form: its true shape has been ascertained to be what is termed an oblate spheroid. Though mountains appear to be enormous protuberances upon the earth's surface, they are inconsiderable when compared with the whole mass of the globe. They may therefore be compared to the little risings on the rind of an orange.

EXPLANATION OF GEOGRAPHICAL TERMS.

13. When we look forth to a great distance upon the surface of the sea or land, our view becomes bounded by a line where the earth and sky seem to meet: this line is called the *Visible* or *Sensible horizon*.

14. The direction of the heavens in which the sun rises in the morning is called the *East*, and that in which it sets in the evening the *West*. When we look at the sun at noon we then face the *South*, and our backs are towards the *North*; on our left is the *East*, and on our right the *West*.

15. The *North*, *South*, *East*, and *West* are called the chief or *Cardinal points* of the Compass, of which there are altogether 32 points. On the plate illustrating the globes there is an engraving of the Compass. Upon a pivot in the centre a little bar of iron, called the *needle*, is placed, and when allowed to move freely it always points towards the North.* By means of the compass

* But not to the true North point of the horizon. The angle which the needle makes with the geographical meridian of any place is called the "Variation of the Compass." According as the needle is inclined to the east or west of the meridian, it is termed *East* or *West* variation. The variation at Greenwich is now about 22° 19' W.

navigators are enabled to direct their course at sea; and by it we can find the position of places with respect to each other: thus, if we know where any one place is situated, and that another is said to be north or south of it, we then know in what direction the place is.

16. *Maps* are pictures of the earth, or parts of its surface. The top of a map is generally the North, and the bottom the South, the right hand the East, and the left the West.

17. In the Map of the World both sides of the earth are presented to view at once; each side is called a hemisphere, or Hemisphere. The Map exhibits the Eastern and Western Hemispheres.

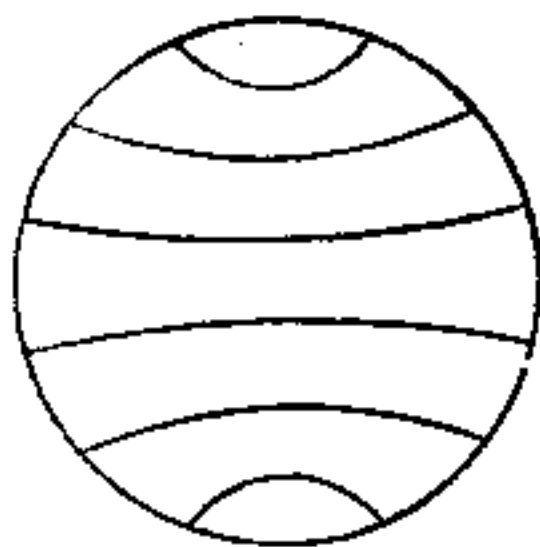
18. The earth turns round once in 24 hours. Besides this motion it performs a revolution round the sun once in a year.

19. The line about which the earth appears to turn in 24 hours is called its *Axis*, and the ends of the axis are called the *Poles*.

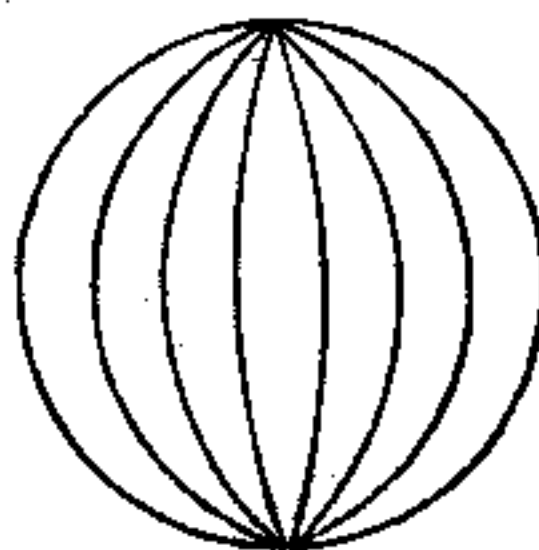
20. There are two Poles: namely, the *North Pole*, which is the north end of the earth's axis, and the *South Pole*, which is the south end.

21. Upon the surface of the earth a number of lines are supposed to be drawn; the principal of these are the Equator, the Parallels of Latitude, and the Meridians.

Parallels of Latitude.



Meridians.



22. *Great Circles* are those which divide the earth into two equal parts, or whose plane passes through the earth's centre.

23. The Equator and Meridians are called *great circles*,

because they divide the globe into two equal parts. The parallels are smaller circles dividing the globe into two unequal parts.

24. The *Equator* is a great circle passing round the globe everywhere at equal distance from each pole. The circumference of the earth at the equator is 24,876 English miles, and its diameter 7926. The axis, or polar diameter, is 26 miles shorter than the equatorial diameter.

25. *Parallels of Latitude* are small circles passing round the globe parallel to the equator.

26. *Meridians* are great circles passing round the globe through the poles, and cutting the equator at right angles.

27. *Latitude* is the distance of a place, in degrees, minutes, or seconds, north or south from the equator. All nations reckon latitude from the equator.

28. *Longitude* is the distance of the meridian of one place in degrees, minutes, or seconds from the meridian of another place. The meridian passing through the Royal Observatory at Greenwich, is that from which we reckon longitude, but some nations assume the meridian of the capital city, or principal observatory, of their own country as a first meridian. The ancients reckoned longitude from Ferro (one of the Canary Islands). Many foreign maps, particularly German, have the longitude reckoned from the same place.

29. The Parallels at $23^{\circ}28'$, on each side of the equator, are called *Tropics*; that on the north the Tropic of Cancer, and that on the south the Tropic of Capricorn. The Parallels $23^{\circ}28'$ from each pole are called the *Polar circles*; that in the North the *Arctic circle*, and that in the South the *Antarctic circle*.

30. These Parallels divide the globe into five zones; namely, —

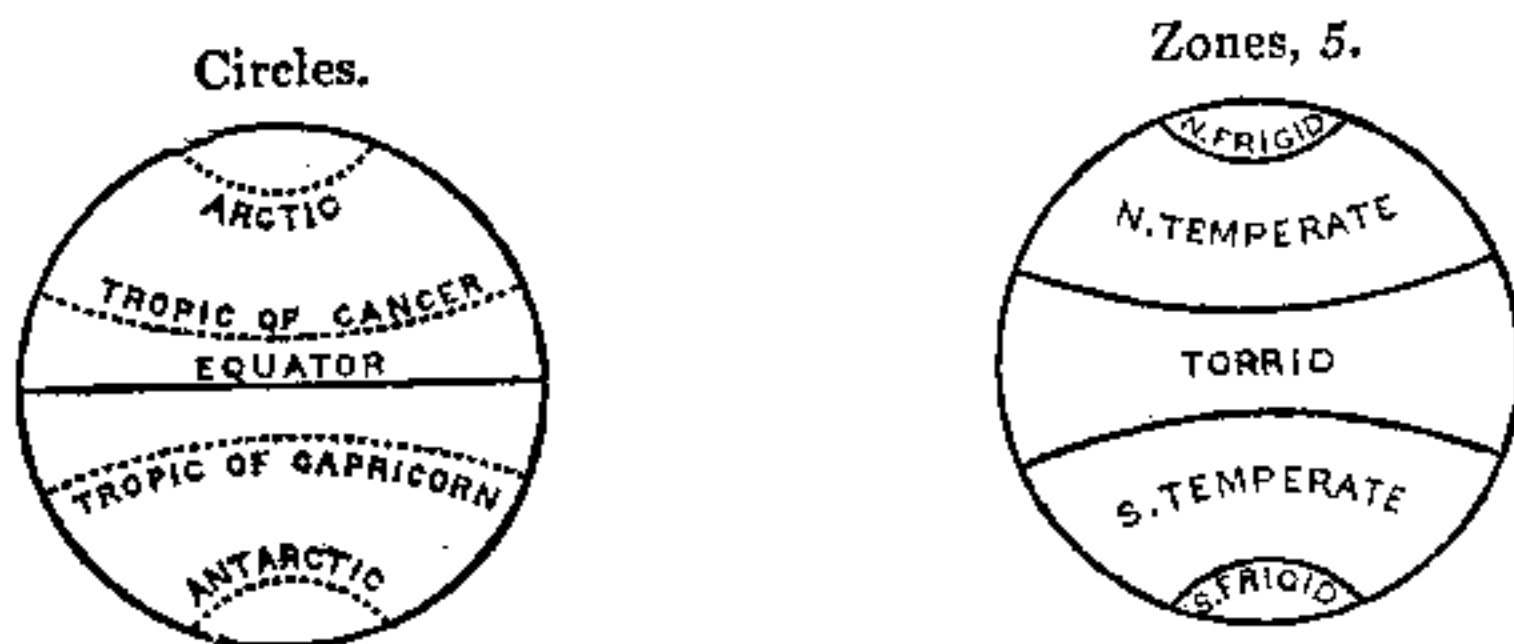
31. *The Torrid Zone*, which embraces that part of the earth between the Tropics.

32. *The North Temperate Zone* is between the Tropic of Cancer and the Arctic circle.

33. *The South Temperate Zone* is between the Tropic of Capricorn and the Antarctic circle.

34. The *North Frigid Zone* is between the *Arctic circle* and the North Pole.

35. The *South Frigid Zone* is between the *Antarctic circle* and the South Pole.



GEOGRAPHICAL TERMS.

36. Land and Water form the two great natural divisions of the earth's surface.

37. The following terms are applied to the various portions of land and water according to their shape, extent, and position.

Land.

Continents.
Islands.
Peninsulas.
Isthmuses.
Coasts and shores.
Promontories.
Capes.

Water.

Oceans.
Seas.
Gulfs.
Bays.
Straits.
Lakes.
Rivers.

38. A *continent* is a portion of land of great extent, not entirely separated by the sea from other lands, as Europe, Asia, and Africa, in the Eastern Hemisphere, and North and South America in the Western Hemisphere. The Island of Australia, from its vast extent, is sometimes called the Southern or Australian Continent.

39. An *island* is land surrounded by water, as Great Britain, Ireland, Cuba, Jamaica, Madagascar, Ceylon, Borneo.

40. A *peninsula* is land almost surrounded by water, as Scandinavia, Spain with Portugal, Italy, Greece, Arabia, Hindoostan, Malacca, Corea, Labrador, Florida, Yúcatan, and Old California.

41. An *isthmus* is a narrow neck of land joining two other portions of land, as the Isthmus of Corinth, connecting the Morea to the Continent of Europe, the Isthmus of Suez joining Africa to Asia, and the Isthmus of Panama, linking together North and South America.

42. A *coast* is the land adjacent to the sea.

43. A *shore* is that part of the land which is washed by the sea.

44. A *promontory* is an elevated and somewhat tapering projection of the land into the Ocean, a sea or lake.

45. A *cape* is a portion of land which points into the sea; it is the extremity of a promontory.

46. The *Ocean*, taken in its widest sense, means that vast body of salt water which encompasses the globe, washing the shores of every continent. In a more limited sense it is distinguished into five grand divisions; viz. —

47. The *Pacific Ocean*, which is bounded by the Arctic circle on the North, and the Antarctic circle on the South. America, and the meridian of Cape Horn, form its Eastern limit: upon the West it is bounded by Asia, the East Indian Archipelago, and Australia. It is divided by the Equator into the North and South Pacific.

48. The *Atlantic Ocean* has the Arctic circle for its limit on the North, and the Antarctic circle on the South. Its Eastern boundary is formed by the shores of Europe and Africa, and the meridian of Cape L'Agullas. Its Western limit is the coast of America and the meridian of Cape Horn, the Equator divides it into the North and South Atlantic.

49. The *Indian Ocean* has for its boundaries Arabia, Persia, Hindoostan on the North, and the Antarctic circle on the South; Africa on the West; and the Islands of the East Indian Archipelago and Australia on the East. It is divided into the Intertropical and Southern Oceans.

50. The *Arctic Ocean* is bounded by the Arctic circle

and the Northern shores of the Continents of Asia, Europe, and America.

51. The *Antarctic Ocean* is between the Antarctic circle and the South Pole.

52. A *sea* is the next largest division of water after an ocean, as the Mediterranean Sea, the Baltic Sea, the White Sea, Black Sea, Red Sea, Yellow Sea, Sea of China, Caribbean Sea, &c. There are, however, some inland seas, or seas unconnected with the ocean, as the Caspian Sea and Sea of Aral.

53. A *gulf* is a deep branch of the sea running into the land, as the Gulf of Finland, the Gulf of Venice, Persian Gulf, the gulf of Mexico, the Gulf of St. Lawrence.

54. A *bay* is an arm of the sea having a much wider opening than a gulf, as the Bay of Biscay, the Bay of Bengal. A *cove* is a well sheltered bay, as the Cove of Cork.

55. A *harbour* is a part of the sea so enclosed by land (except at its entrance), that ships may ride at anchor within it in safety.

56. A *road* or *roadstead* is an open part of the sea, not far from the shore, affording temporary anchorage for inward or outward bound vessels.

57. A *creek* is a narrow portion of the sea, or of rivers running into the land.

58. *Straits*, a term generally used in the plural, signifying a short and narrow passage joining two seas, as the Straits of Gibraltar, the Straits of Dover, the Straits of the Sound, the Straits of Messina, Behring's Straits, Straits of Magelhaens.

59. A *channel* is a long and narrow passage of water leading from one sea to another, as the English Channel, St. George's Channel.

60. A *frith* (*fretum*) generally called *firth*, is a narrow arm of the sea into which a river falls, as the Firth of Forth, the Solway Firth, the Firth of Tay, Dornoch Firth, and Moray Firth. It is also applied in Scotland to open channels, as the Pentland Firth, &c.

the tides of the sea, as the Estuaries of the Humber, Mersey, and Dee.

62. *Currents* are constant movements of the waters of the sea, and of rivers in certain directions. Those of rivers and of particular straits and channels are termed *constant currents*; of this class also are the Equatorial and Polar Currents. *Occasional currents* are those which are produced by occasional causes.

63. An *archipelago* is a large number of islands of various sizes, as the Grecian Archipelago, the Aleutian Archipelago, the Caribbean Archipelago.

64. A *lake* is a portion of water of greater or less extent, surrounded by land, as the Lake of Ladoga, the Lake of Geneva, Lake Baikal, Lake Tchad, the fresh water lakes of North America, namely Superior, Michigan, Huron, Erie, Ontario; the Lake Titicaca in South America is remarkable as being one of the highest known lakes in the world, having an elevation of 12,800 feet.

65. A *river* is a current of water, flowing in an open channel through the land. Rivers are formed by brooks and rivulets, whose collected waters they pour into the ocean or some great inland lakes. The *source* of a river is where it rises or begins to flow, the *mouth* where it discharges its waters into a lake or the sea.

66. The surface of the land is composed of mountains, hills, upland plains or plateaus, lowland plains, valleys, and deserts.

67. A *mountain* is an enormous mass of the earth, considerably elevated above the level of the sea, as the Alps, the Atlas, the Himalaya, the Rocky Mountains, and the Andes.

68. A *hill*. This name may be properly applied to elevations under 1000 feet.

69. *Upland plains* or *plateaus* are extensive tracts, whose general level is considerably elevated above that of the sea.

70. *Lowland plains* are tracts of land only slightly elevated above the level of the sea; in some places, however they are below it.

71. *Valleys* are the spaces lying between opposite ranges of mountains or hills.

72. *Desert* is now used to denote sterile tracts which are occupied by stony or sandy plains, and rendered, by the nature of their soil, their want of water, or other causes, unfit for the permanent abode of man.

DISTRIBUTION, FORM, AND GENERAL FEATURES OF THE LAND.

73. The whole extent of the earth's surface has been estimated at about $196\frac{1}{2}$ millions of English square miles, of which the land occupies about $51\frac{1}{2}$ millions, and the ocean waters about 145 millions: the land therefore occupies about one-fourth, and the ocean waters about three-fourth parts of the surface of the globe.

74. If the surface of the earth be represented as on the Map of the hemispheres, it has been calculated that there is about $2\frac{1}{2}$ times as much land in the Eastern hemisphere as in the Western, and that there is about 3 times as much land to the north of the equator as to the south of it.

75. Though the coast line of the land appears much indented and broken, yet it may be observed that the large continents in their general outline are of a triangular shape: this is very striking in the form of North and South America, in Africa, and in the great peninsulas of Europe and Asia. It may be further observed, that the continents, with the exception of Africa, present on their northern sides vast flats of low-lying land, and that the southern coasts are lofty and pointed. It is also remarkable that almost all the peninsulas point southward; for instance, in the Eastern hemisphere, there are Scandinavia, Italy, Greece, Africa, Arabia, Hindoostan, Malacca, Corea, and Kamschatka; and in the Western hemisphere, Greenland, Nova Scotia, Florida, California, and South America. The peninsulas pointing northward are Jutland in Europe, and Yucatan in America; those stretching westward are the peninsulas of Aliaska in

Russian America and Cotentin in France. The surface of the land too is exceedingly irregular, consisting in many places of elevated mountain masses, and in others of extensive lowlands. In some places the land is merely undulating, and in others it is rugged and broken. Upon referring to the Map of the Hemispheres, we observe that in the Eastern hemisphere the mountain-chains run nearly in the direction from east to west, and that in the Western hemisphere they run from north to south. From these elevated ridges the land slopes towards the sea, sometimes very gently, and at others abruptly. It is this variation of level that influences the direction and magnitude of rivers, and is one of the principal causes in producing the differences of climate in countries similarly situated with respect to the Equator.

76. The whole area of the land has been estimated at $51\frac{1}{2}$ millions of square miles, as exhibited in the following Table.

The Eastern Continent or Old World.

Europe, area in sq. miles	-	$3\frac{3}{4}$ millions.
Asia	„	$17\frac{1}{2}$ „
Africa	„	$11\frac{3}{4}$ „
Total		- 33

The Western Continent or New World.

North America and the West		
India Islands, area	-	8 millions.
South America, „	-	$6\frac{1}{2}$ „
Total		- $14\frac{1}{2}$

Oceania, or the Maritime World, about 4 millions.

THE WORLD.

77. EUROPE, Asia, Africa, America, and Oceania, form the five grand divisions of the globe. It has been conjectured that the number of human beings inhabiting these vast regions amounts to about 1000 millions; of which

Europe contains	-	-	270 millions.
Asia	-	-	600 „
Africa	-	-	70 „
America	-	-	58 „
Oceania	-	-	2 „
<hr/>			
Total	-	-	1000

78. Mankind has been arranged into five great families or classes, according to the form of the skull and colour of the skin: 1. the *Caucasian*; 2. the *Mongolian*; 3. the *Ethiopic*; 4. the *Malay*; 5. the *American*.

79. The *Caucasian* or *white*. In this class the head is almost round, the face nearly oval, the forehead high, the nose arched, the cheek-bones rather narrow, the mouth small, and the teeth in the upper jaw nearly perpendicular to the lower. They inhabit Europe, the west and north of Asia, Northern Africa, and the various European colonies. Though the Caucasians are properly enough called the white race, because they are all born with light complexions, their colour seems to depend very much upon climate and the degree of solar heat to which they are exposed. The colour deepens by regular gradation, from the farthest north, where they are very fair, through the olive-coloured people of the south of France, of Spain, Portugal, Italy, Greece, and the swarthy Moors, till the gradation leads into the deep black natives of the African and Arabian deserts and of inter-tropical India.

80. The *Mongolian* or *yellow class* has the head almost square, the face broad and flat, the cheek-bones pro-

jecting, the nose flat and nostrils narrow, the skin of an olive brown, the hair thin, long, and coarse: they have little or no beard. In this class are comprised the numerous tribes that occupy the central, north-east, east, and south-east parts of Asia, the Chinese and Japanese, the people of Tibet, Bootan, and Indoo-China, the Finns and the Laplanders of the north of Europe, and the Esquimaux who live along the shores of the Polar Sea of America and Greenland. The Turks also are probably of Mongolian origin.

81. The *Ethiopic* or *black race* has the head narrow and compressed at the sides, the forehead very convex and vaulted, the cheek-bones projecting, the nose round and flat, and the nostrils wide; the lips, particularly the upper one, very thick; the skin and eye deep black; the hair black and woolly. In this class are comprised all the natives of Africa, to the south of the Sahara and Abyssinia; also the natives of Australia, Van Diemen's Land or Tasmania, Papua or New Guinea, New Britain, the Solomon Islands, New Georgia, the New Hebrides, new Caledonia, the Feejee Islands, and also various tribes throughout the Indian Archipelago.

82. The *Malay* or *tawny class* has the top of the head slightly narrowed, the face broader than that of the negro; the nose broad, and thick towards the point; the colour of the skin is brown or tawny; the hair black, soft, and curled, and abundant. In this class are comprised all the natives of the islands of the Pacific Ocean (excepting those already mentioned as belonging to the Ethiopic class), likewise the dominant nations of the Indian Archipelago.

83. The *American* or *copper-coloured class* approaches the Mongolian: the cheek-bones are prominent; the face is broad, but not flat; the forehead low; eyes deep-seated; nose rather flat, but prominent; the skin is red, more or less dark or copper-coloured, and approaching to black, according to climate and other circumstances; the hair is like that of the Mongolian class, and they have little or no beard. In this class are comprehended

all the native American tribes and nations, excepting of course the Esquimaux, and the descendants of European colonists and negroes.

84. We shall now proceed to consider the Physical and Political Geography of the great divisions of the Globe.

EUROPE.

GENERAL DESCRIPTION.

PHYSICAL GEOGRAPHY.

85. *Astronomical Position, Extent, Boundaries.* — This continent forms the north-western portion of the Old World, and is situated between 36° and 71° north latitude, and between 10° west and 70° east longitude. Its greatest length, which is in the direction of north-east and south-west, is about 3500 miles, from the mouth of the river Kara, which falls into the Arctic Ocean, to Cape St. Vincent in Spain. Its greatest breadth from Cape North in Lapland to Cape Matapan in Greece is about 2450 miles. Its area, including the islands, is estimated at about $3\frac{3}{4}$ millions of square miles. The Arctic Ocean bounds it on the North, the Mediterranean with its branches on the South, and the Atlantic on the West. On the East it has a political boundary, formed by the Ural mountains, the river Ural, the western shores of the Caspian, and a line continued along the range of the Caucasus and the northern shores of the Black Sea.

86. *General Aspect.* — The whole surface, which is distinguished by great irregularities, may be divided into three grand divisions: viz. the southern and north-western mountain regions, and an extensive intervening plain. The coast line is very much broken and varied by numerous inland seas, gulfs, and harbours; its whole



extent, which is about 19,500 miles, is longer in proportion to the size of the continent than that of any other of the great divisions of the globe.

87. *Seas.* — The principal inland seas of Europe are, the White and Baltic Seas, in the north; the Mediterranean Sea, Sea of Marmora, Black Sea, and Sea of Azov, in the south.

The *White Sea* is an offset of the Arctic Ocean. The *Baltic Sea* belongs to the basin of the Atlantic, and is connected with it by the channels called the Skager-rack and the Cattegat.

The *Mediterranean Sea* is the largest inland sea on the globe, and covers an area of more than a million of square miles. Different portions of it are distinguished by the names of the countries to which they are adjacent, as the Gulfs of Lyons and Genoa, the Sea of Tuscany, the Sea of Sicily, and the Ionian Sea. The *Adriatic Sea* is a long and narrow arm of the Mediterranean, which runs up to the eastward of Italy. The *Archipelago* is that part of the Mediterranean which lies between Greece and Asia Minor. The eastern part of the Mediterranean is sometimes called the *Levant*.

The *Sea of Marmora* lies between the Mediterranean and Black Seas. The *Sea of Azov* is situated to the north-eastward of the Black Sea.

The *Caspian Sea*, which lies to the south-eastward of Europe, is really a lake, and the largest in the world. But the greater portion of its shores belongs to Asia.

88. That part of the Atlantic which lies between the British Islands and the opposite shores of Holland, Denmark, and Norway, is called the *North Sea*, and its more southern portion is distinguished as the *German Ocean*. The *Zuyder Zee* is a large arm of the German Ocean, which penetrates the coast of Holland.

The *English Channel* extends between the shores of England and France. The *Irish Sea* lies between Great Britain and Ireland, and is connected with the Atlantic by the North Channel and St. George's Channel.

89. *Gulfs and Bays.* — The *Gulfs of Bothnia, Fin-*

land, and *Riga*, are arms of the Baltic Sea. The *Bay of Biscay* is a broad arm of the Atlantic, which washes the shores of France and Spain. The *Bay of Setubal*, or *St. Ubes*, is on the west coast of Portugal; the *Bay of Trafalgar*, in the south-west of Spain.

The *Gulfs of Lyons* and *Genoa*, the *Bay of Naples*, the *Gulf of Taranto*, and the *Gulf of Corinth*, or *Le-panto* (between the Morea and the northern part of Greece), all belong to the Mediterranean. The *Gulfs of Venice*, *Trieste*, and *Fiume*, are in the northern portion of the Adriatic Sea.

90. *Straits and Channels*. — The *Sound* (between the island of Zealand and the coast of Sweden), the *Great Belt* (between the islands of Zealand and Funen), and the *Little Belt* (between Funen and the peninsula of Jutland), form the three entrances to the Baltic Sea.

The *Straits of Dover* connect the English Channel with the German Ocean.

The *Straits of Gibraltar* form the entrance to the Mediterranean Sea; the *Straits of Bonifacio* lie between Corsica and Sardinia; the *Straits of Messina*, between the island of Sicily and the southern extremity of Italy. The *Straits of the Dardanelles* lead from the Archipelago to the Sea of Marmora, and the *Channel of Constantinople* (or Bosphorus) connects the Sea of Marmora with the Black Sea. The *Straits of Yenikale* lead from the Black Sea to the Sea of Azov.

91. *Capes*. — The principal headlands of Europe, commencing with the most northern point, and proceeding southward, are — the *North Cape* (N. coast of Norway); the *Naze* (S. point of Norway); the *Skawe* (N. point of Denmark); *Cape la Hague* (N. coast of France); *Capes Ortegal* and *Finisterre* (N. W. of Spain); *Cape Roca* (W. coast of Portugal, and the most western point of the continent); *Cape St. Vincent* (S. W. of Portugal); *Cape Trafalgar* (S. W. of Spain); and *Cape Tarifa* (S. of Spain, and the most southern point of Europe).

On the coast of the Mediterranean are, *Cape Sparti-vento* (S. of Italy); *Cape di Leuca* (S. E. point of Italy);

Cape Passaro (S. of Sicily); and *Cape Matapan* (S. of Greece).

Upon the shores of the British Islands are, *Cape Wrath*, the *Land's End*, the *Lizard Point*, the *North Foreland*, *Malin Head*, *Cape Clear*, and many others.

92. *Peninsulas and Isthmuses*. — The principal peninsulas are: — *Scandinavia* (or Sweden and Norway), lying between the Baltic Sea and the Atlantic; *Jutland*, between the Cattegat and the North Sea; the *Spanish Peninsula* (comprising Spain and Portugal); *Italy*; *Greece* (the southern part of which forms the smaller peninsula of the *Morea*); and the *Crimea* (between the Black Sea and the Sea of Azov).

The *Isthmus of Sleswig* connects the peninsula of Jutland with the mainland; the *Isthmus of Corinth* unites the Morea to the rest of Greece; and the *Isthmus of Perekop* joins the Crimea to the continent.

93. *Islands*. — In the *Arctic Ocean*: *Spitzbergen*, *Nova Zembla*, *Vaygatz*, *Kolgouev*, the *Lofoden Islands*, and *Jan Mayen Island*.

In the *Atlantic Ocean*: *Iceland*, the *Faroe Islands*, the *British Islands*, and the *Azores*. The *British Islands* comprehend *Great Britain*, *Ireland*, the *Hebrides*, the *Orkney Islands*, the *Shetland Islands*, the *Isle of Man*, the *Isle of Anglesey*, the *Isle of Wight*, and the *Scilly Islands*.

In the *Baltic Sea*: *Zealand*, *Funen*, and numerous others, which form the *Danish Archipelago*; *Rugen*, *Bornholm*, *Oland*, *Gothland*, *Dago*, *Oesel*, the *Aland Islands*, and *Cronstadt*.

In the *North Sea*: *Walcheren*, *Texel*, and others, off the coast of *Holland*; with *Heligoland*, off the mouth of the *Elbe*.

In the *English Channel*: the *Isle of Wight*, and the *Channel Islands*, which comprise *Jersey*, *Guernsey*, *Alderney*, and *Sark*.

In the *Bay of Biscay*: *Ushant* (or *Ouessant*), *Belle Isle*, *Ré*, and *Oleron*, near the coast of *France*.

In the *Mediterranean Sea*: *Majorca*, *Minorca*, *Iviça*,

and Formentera, which are together called the **Baleáric Islands**; Corsica, Sardinia, Elba, the **Lipari Islands**, Sicily, Malta, the **Ionian Islands**, Candia, the islands of the **Grecian Archipelago**, and some small islands on the east coast of the **Adriatic**.

94. **Mountains.** — The principal mountain ranges are: the **Balkan**, the **Alps**, the **Apennines**, the **Cevennes**, the **Pyrenees**, and the **Sierra Nevada**, in the south of Europe; the **Carpathian** and **Hercynian Mountains**, in the central parts; the **Scandinavian Mountains**, in the north-west; the **Ural Mountains**, in the east; and **Mount Caucasus**, in the south-east. The **Ural Mountains**, and the chain of **Mount Caucasus**, belong equally to Europe and Asia.

The **Alps**, which extend in a semi-circular form round the north of Italy, are the highest of the European Mountains, and their principal summit, **Mont Blanc**, is 15,732 feet in elevation. All their higher parts are covered with perpetual snow. The **Sierra Nevada**, in the south of Spain, and the **Pyrenees**, between France and Spain, also rise above the snow-line.

The **Balkan Mountains** are in Turkey; the **Apennines** stretch through the whole length of Italy; the **Cevennes** are in France; the **Carpathian Mountains**, between Hungary and Galicia; the **Hercynian Mountains**, in Germany; and the **Scandinavian Mountains**, between Sweden and Norway. The highest range of the **Scandinavian Mountains** is called the **Dovre-field**.

95. The only active *volcano* on the continent of Europe is **Mount Vesuvius**, in the south of Italy. But there are several others in the European islands, the most celebrated of which are **Mount Etna**, in Sicily, and **Mount Hecla**, in Iceland.

96. **Table-Lands.** — These consist of Central Spain, Switzerland, Bavaria, Finland, and the southern portion of Norway.

97. **Plains and Valleys.** — The greater part of Europe forms an immense plain, or lowland, which stretches from the eastern extremity of the continent to the shores of the German Ocean, and from the Black Sea and the

foot of Mount Caucasus to the shores of the Arctic Ocean. Besides this great level region, there are the plains of the Lower Danube, of Hungary, Bohemia, and Lombardy.

98. *Deserts*.—Europe presents no tracts properly called Deserts, but there are extensive wastes and heaths: the chief of which are the steppe of Ryn, between the Volga and Oural; the steppe of the Ural, between that river and the Don; the steppe of Crimea, and the steppe of Petchora. There are also large sterile tracts in North Germany, in South France, and in Lapland, Sweden, and Norway.

99. *Rivers*.—These may be classed according to the seas into which they fall; we shall therefore arrange the most important in the following order:—

100. 1. Rivers falling into the Arctic Ocean: the Tana, the Petchora, and the Kara. The White Sea receives the Mezen, the Northern Dwina or Dvina, and the Onega.

101. 2. The Baltic and its branches receive the Tornea, the Lulea, Pitea, Umea, Indals, and Dal. From Russia: the Neva, the Southern Dwina, and the Niemen. From Germany: the Vistula and the Oder.

102. 3. The Atlantic and its branches receive the British rivers; the most important of which are the Thames, Humber, Severn, Mersey, Clyde, and Shannon. From Germany flow the Weser and Elbe. From Holland: the Scheldt, the Meuse, and the Rhine. From France: the Seine, Loire, and Garonne. From Spain: the Minho, Douro, Tagus, Guadiana, and Guadalquivir.

103. 4. The Mediterranean and its branches receive from Spain the Xucar and Ebro; the Rhone from France; the Arno, Tiber, and Po, from Italy; the Maritza, the Struma, and the Vardar, from European Turkey; the Danube, Dneister, Bug, Dnieper, and the Kouban, fall into the Black Sea; and the Don into the sea of Azov.

104. 5. The Caspian receives the Terek, Volga, and Ural.

105. *Lakes*.—In Russia there are Ladoga, Onega, Peipus, Bielo-Osero, Ilmen.

In Finland: Saimas, Ulea, Tavesthus or Nesi, Kuopio.

In Lapland: Enara.

In Sweden: Wener, Wetter, Mælar.

In Switzerland: Geneva, Constance, Neuchatel, Lucerne, and Zurich.

In Italy: Garda and Como.

In Hungary: Balaton.

106. *Soil*. — The soil of Europe is in most parts extremely fertile, and is distinguished from that of any other quarter of the globe in the value of its productions. Its northern forests furnish the finest timber. Grain of almost every kind is raised over its surface, excepting the extreme north. The vine flourishes in the southern districts, and nowhere are the more substantial and agreeable articles of human diet produced on so great a scale, or in such high perfection.

107. *Climate*. — With respect to the temperature and the duration of the different seasons of the year, Europe may be divided into three parallel zones; viz. the *southern zone* or *climate*, which extends southward of latitude 45° ; in this zone the cold is slight, the winter being mostly confined to rainy weather, from October to January. Snow rarely falls, and vegetation is scarcely impeded. — The *middle* or *temperate zone*, between latitude 45° and 55° . The winter is the longest season, lasting generally from November to March or April. — The *northern climate* extends over the regions to the north of 55° . The seasons are for the most part confined to two — summer and winter. In the more northern part of this zone the snow lies on the ground, and the rivers are frozen for more than six months of the year. The severities of a long winter are succeeded by two or three months of intense heat, during which the sun never sinks below the horizon.

PRODUCTIONS.

108. *Minerals*. — The mines furnish an almost inexhaustible supply of those metals which are most serviceable to man; namely, iron, lead, copper, tin, coal, and salt; which are plentiful in Western Europe, particularly Great Britain. Quicksilver is obtained from the mines

of Adria in the Austrian Empire, and gold and platina from the Ourál Mountains.

109. *Vegetation.* — South of 38° the date-palm, sugarcane, cotton plant, and castor-oil plant flourish. In Greece, Turkey, and Southern Russia, there is a large intermixture of Asiatic plants. Up to latitude 44° the orange, lemon, olive, and other fruits are found in great abundance; the mulberry, pomegranate, and melons also abound. To the south of 44° the mountains are covered with chestnut-woods: evergreens take the place of oaks. The vine affords excellent wine in the West as high as 48° , where the vine begins to fail. Apple and pear trees flourish. The limits of the bread corns are not well defined: 58° may be regarded as the limit of the culture of wheat; but the hardier grains, as rye, oats, and barley, are cultivated in some parts as high as 67° N. In Scandinavia, Russia, and Germany, there are extensive forests: in these regions the oak is the lord of the forest, and often attains to an enormous size; it disappears about latitude 60° , the ash about 62° ; the beech and lime are seldom found farther N. than 63° , or firs and pines beyond 70° . In the Alps, the Pyrenees, and on the slopes of Mount Etna, similar vegetable products are met with at different degrees of elevation. The plane tree, flowering ash, carob, laurels, and a host of dyeing, medicinal, and aromatic plants abound; and the surface of the earth is almost continually clothed with the richest verdure.

110. *Animals.* — The increase of population, clearing of forests, and cultivation of the soil have greatly checked the increase of wild animals in this continent. The most formidable are the white bear, confined to the arctic region, and the black and brown bear common in the Alps and Pyrenees; the wolf inhabiting many parts of Europe, and the wild boar met with in the woods and forests of Germany, France, and Russia.

111. The largest animals are the elk, the reindeer, the red deer, and roebuck; and in the Alpine regions, the chamois and ibex, &c. The smaller animals are the

lynx, wild cat, fox, marten, otter, beaver, pole-cat, glutton, porcupine, hedgehog, weasels, squirrels, hares, rabbits, rats, mice, &c. The lemming, a species of rat, a native of Scandinavia, is a great scourge to the industrious Swede and Norwegian. Myriads of these animals travel at irregular periods from east to west in search of food, and devour every thing that comes in their way, spreading desolation all around.

112. Europe contains the most valuable, as well as the most numerous, breeds of domestic animals. The black cattle and sheep have attained to the highest perfection, particularly in England. The English draught-horses are unrivalled for strength, and the race-horses for speed and endurance. The ass is much valued in the South, where his sure-footedness and hardiness render him highly valuable: he, however, degenerates in the colder parts of the continent. Hogs are plentiful in almost every country of Europe, and dogs are more numerous than anywhere else. The domestic cat appears to have descended from the wild species. The domestic goat is believed to have been derived from a wild species inhabiting the Alps and Illyria.

113. The birds are much more various than the quadrupeds. The birds of prey are vultures; of which there are four species, inhabiting the Alpine ranges. Eagles, falcons, owls, &c. are met with in the rocky and mountainous parts of the North. Within the Arctic region the birds are nearly all aquatic.

114. The Balearic crane, pelican, flamingo are found in the South. Game is generally diffused throughout the whole of Europe; but the red grouse is confined to Scotland. Poultry, &c. are plentiful, particularly in the West. The smaller birds cannot boast the brilliant plumage of those inhabiting the other continents, but they excel all others in melody.

115. The nightingale is remarkable for the richness and variety of its song. It is said to be common in nearly all the parts of Europe as far north as Sweden, inclusive; and that it migrates in winter into Egypt and Syria.

116. Though Europe be not wholly free from reptiles, few of them are either large or venomous.

117. The principal fishes inhabiting the oceans and seas are the cod, herring, whiting, mackerel, haddock, mullet, anchovy, and tunny: the two latter are confined to the Mediterranean.

118. Shell-fish abound in the Northern Seas, and seals in the Arctic Ocean, and Baltic, and their branches. The salmon, pike, trout, carp, perch, &c. inhabit the fresh waters. Insects are numerous in the South. The silk worm is perhaps the most useful to man, and is reared in Italy, Greece, and Turkey. Europe is considered the grand region of butterflies.

119. *Races of Men.* — The Europeans chiefly belong to the Caucasian race. They are grouped into several distinct families, the most important of which are the Spanish or Iberian (comprising the Spaniards and Portuguese); the Celtic, including the inhabitants of France, Belgium, part of Switzerland, and part of the British Isles (the Highlanders of Scotland, and the Welsh, ~~Manx~~, Cornish, and Irish, belong to this family); the Italian, including the inhabitants of the various States of Italy; the Greek, comprising the inhabitants of the Greek continent and islands; the Turkish or Tartar, the inhabitants of Turkey; the Slavonic, embracing the Russians, Poles, a portion of the Bohemians, and the people of Lithuania, Moravia, and the provinces on the Danube; the Finnish, (the Finns and Laplanders, who with the Turks, and Magyars of Hungary, are probably of *Mongolian* origin,) a mixed race inhabiting the eastern portions of the Austrian empire, and the German family. Each of these has its peculiar characteristic: the latter is the most remarkable as being the most enterprising and powerful; blue eyes, yellow or flaxen hair, and a fair skin, are its leading features. It embraces the inhabitants of Germany, part of Switzerland, the Swedes, Norwegians, Danes, Dutch, and a large proportion of the English and Scotch.

NATURAL AND POLITICAL DIVISIONS.

120. Europe in respect to its natural divisions is formed by its mountain ranges, rivers, and seas, into several distinct countries. The two grand divisions are Eastern and Western Europe, the former comprehending the countries on the north and south of the Carpathian Mountains; the latter, the countries north and south of the Alps, the countries of the Baltic, the islands of the North Sea, and the Spanish Peninsula.

121. Its political divisions are at present (1863) fifty-one independent states, which may be arranged in four ranks. In the first of these stand Great Britain, Russia, France, Austria, and Prussia, called the five great powers. The states of the second rank are Spain, Italy, Holland, Belgium, Sweden, and Turkey. Those of the third are Portugal, Bavaria, Denmark, Saxony, Würtemberg, Hanover, and the Swiss Confederation. The remainder belong to the fourth rank.

122. The forms of government are various, but may all be distributed into three great classes; viz. Empires, Kingdoms, and Republics.

POLITICAL DIVISIONS.

Sovereign States.	Capitals. Situation.	Population.	Religion.
United Kingdom of Great Britain and Ireland comprises:— England and Wales	London, on the river Thames.	[In 1861.] 20,061,000 3,062,000 5,764,000 37,000,000 67,000,000 35,000,000 17,700,000	{ Protestants of every sect, Catholics, Jews, &c.
Scotland -	Edinburgh, on the Firth of Forth.		
Ireland -	Dublin, on the Liffey.		
Empire of France	Paris, on the Seine -		
Empire of Russia	Petersburg, on the Neva.	67,000,000	Catholics and Protestants.
Empire of Austria	Vienna, on the Danube.	35,000,000	Greek Church and Catholics.
Kingdom of Prussia	Berlin, on the Spree	17,700,000	Catholics and Evangelicals.

Sovereign States.	Capitals, Situation.	Population.	Religion.
Bavaria	Munich, on the Isar	4,616,000	Catholics and Lu- therans.
Saxony	Dresden, on the Elbe	2,122,000	Lutherans and Ca- tholics.
Württemberg	Stuttgard, on Nesen, tributary of the Neckar.	1,786,000	Lutherans and Ca- tholics.
Hanover	Hanover, on the Leine, branch of the Weser.	1,419,000	Lutherans and Ca- tholics.
The minor German States.	- - -	7,000,000	Protestants and Ca- tholics.
Kingdom of Spain	Madrid, on the Man- zanares.	15,464,000	Catholics.
Kingdom of Portugal	Lisbon, on the Tagus	3,579,000	Catholics.
Kingdom of Italy	Turin, on the Po	21,728,000	Catholics.
States of the Church	Rome, on the Tiber	690,000	Catholics.
Republic of San Ma- rino.	San Marino	7,000	Catholics.
Kingdom of Holland	Amsterdam, on the river Amstel.	3,524,000	Calvinists.
Kingdom of Belgium	Brussels, on the Senne.	4,671,000	Catholics.
Kingdom of Denmark	Copenhagen, on the I. of Zealand.	2,239,000	Lutherans.
Kingdom of Sweden	Stockholm, on lake Mælar.	3,734,000	Lutherans.
Kingdom of Norway	Christiania, on Chris- tiania Bay.	1,490,000	Lutherans.
Switzerland	Berne, on the Aar	2,395,000	Protestants and Ca- tholics.
Ottoman Empire	Constantinople, on the Sts. of Bos- phorus.	15,000,000	Mahomedans and Greeks.
Principality of Ser- via.	Kragojevatz	1,000,000	Greek Church.
Principality of Wal- lachia.	Bukharest	2,600,000	Greek Church.
Principality of Mol- davia.	Jassy	1,400,000	Greek Church.
Republic of Andorre	Andorre, on the S. declivity of the Pyrenees.	8,000	Catholics.
Kingdom of Greece	Athens	1,270,000	Greek Church.

THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.

123. The United Kingdom consists of the two large islands of Great Britain and Ireland, and of numerous smaller islands. The island of Great Britain is divided into England, Wales, and Scotland. It is about 600 miles long, and with the smaller islands contains an area of 88,294 square miles.

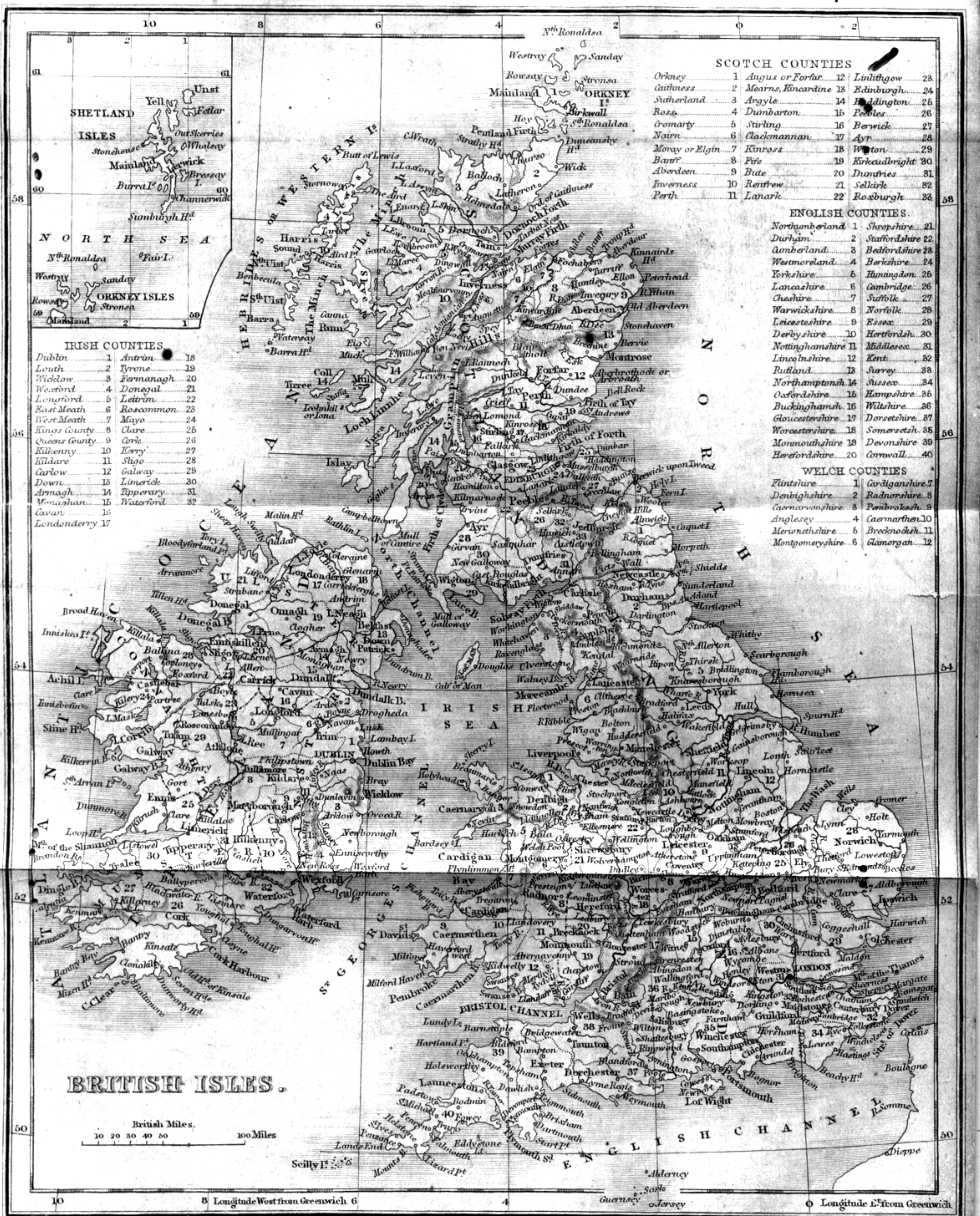
ENGLAND.

124. England is the southern and larger portion of the island of Great Britain, and embraces an area of 50,387 square miles. It is bounded on the north by Scotland; on the east by the German Ocean; on the south by the English Channel; and on the west by the Atlantic Ocean, the counties of Wales, and the Irish Sea. The surface of England is beautifully diversified; its north-western parts are mountainous, the west and south hilly, the centre undulating, and the eastern districts generally low and flat.

125. *Mountains.* — The *Cheviot Hills* are on the borders of England and Scotland. The *Pennine Chain* runs from north to south, through the six northern counties of England. The *Cumbrian Mountains* (in Cumberland, Westmoreland, and the northern part of Lancashire) contain the highest summits in England; their loftiest point, called *Scaw Fell*, is 3166 feet in elevation, and next in height are *Helvellyn* and *Skiddaw*.

The other principal hills are, the district of the *Peak*, in Derbyshire; the *Malvern Hills*, on the borders of Worcestershire and Herefordshire; the *Cotswold Hills*, in Gloucestershire; the *Mendip Hills*, in Somersetshire; the *Chiltern Hills*, in Oxfordshire and Buckinghamshire; the *North Downs*, in Kent and Surrey; the *South Downs*, in Sussex; and *Dartmoor*, in Devonshire.

126. *Rivers.* — The principal rivers in England are: — the *Thames*, which rises on the borders of Gloucestershire, and flows into the German Ocean; the *Medway*, which joins the Thames near its mouth; the *Severn*, which rises in Wales, and its lower course expands



SCOTCH COUNTIES			
Orkney	1	Angus or Forfar	12
Caithness	2	Mearns, Kincardine	13
Sutherland	3	Argyle	14
Ross	4	Dumarton	15
Gromarty	5	Stirling	16
Nairn	6	Blackmanner	17
Moray or Elgin	7	Kinross	18
Baird	8	Perth	19
Aberdeen	9	Bide	20
Inverness	10	Renfrew	21
Perth	11	Lanark	22
		Linlithgow	23
		Edinburgh	24
		Haddington	25
		Peebles	26
		Berwick	27
		Ayr	28
		Winton	29
		Kirkcudbright	30
		Dumfries	31
		Selkirk	32
		Rosburgh	33

ENGLISH COUNTIES			
Northumberland	1	Shropshire	21
Durham	2	Staffordshire	22
Cumberland	3	Bedfordshire	23
Westmoreland	4	Berkshire	24
Yorkshire	5	Huntingdon	25
Lancashire	6	Cambridge	26
Cheshire	7	Suffolk	27
Warwickshire	8	Northfolk	28
Leicestershire	9	Essex	29
Derbyshire	10	Hertfordshire	30
Nottinghamshire	11	Middlesex	31
Lincolnshire	12	Kent	32
Rutland	13	Surrey	33
Northamptonshire	14	Sussex	34
Oxfordshire	15	Hampshire	35
Buckinghamshire	16	Wiltshire	36
Gloucestershire	17	Dorsetshire	37
Worcestershire	18	Somersetshire	38
Monmouthshire	19	Devonshire	39
Herefordshire	20	Cornwall	40

WELSH COUNTIES			
Flintshire	1	Cardiganshire	7
Denbighshire	2	Radnorshire	8
Caernarvonshire	3	Pembrokeshire	9
Anglesey	4	Caermarthen	10
Merionethshire	5	Breconshire	11
Montgomeryshire	6	Glamorgan	12

IRISH COUNTIES			
Dublin	1	Antrim	18
Louth	2	Tyrone	19
Wicklow	3	Fermanagh	20
Wexford	4	Donegal	21
Longford	5	Leitrim	22
East Meath	6	Roscommon	23
West Meath	7	Mayo	24
Kings County	8	Clare	25
Queens County	9	Cork	26
Kilkenny	10	Kerry	27
Kildare	11	Sligo	28
Carlow	12	Galway	29
Down	13	Limerick	30
Armagh	14	Tipperary	31
Monaghan	15	Waterford	32
Cavan	16		
Londonderry	17		

into the Bristol Channel. The Trent flows through the Midland counties by Nottingham, the Ouse through Yorkshire; and these two form the great estuary of the Humber. The Mersey passes by Liverpool, the Tyne by Newcastle, and the Tees by Sunderland.

127. *Lakes.*—The principal are Derwent and Uls-water, in Cumberland; Windermere, in Westmoreland; Coniston, in Lancashire. Though small, they are very beautiful.

128. *Islands.*—The Isle of Wight, on the southern coast, is famous for its picturesque beauty. Jersey, Guernsey, Alderney, and Sark, are populous small islands, near the coast of France. The Isle of Man is in the Irish Sea. The Scilly Islands stretch beyond the promontory of Cornwall. On the coast of Northumberland lie Holy Island, and the Farn and Coquet Islands; and in Kent are Thanet and Sheppey.

129. England contains forty Counties or Shires, viz. :—

	Counties.	Chief Towns.
Northern.	Northumberland -	Newcastle-upon-Tyne, Alnwick, Tyne-mouth, Berwick.
	Cumberland -	Carlisle, Whitehaven, Workington, Pen-rith.
	Durham -	Durham, Sunderland, South-Shields, Darlington, and Stockton.
	Westmoreland -	Appleby, and Kendall.
	Lancashire -	Lancaster, Liverpool, Manchester, Bol-ton, Preston.
	Yorkshire -	York, Leeds, Sheffield, Hull, Bradford, Huddersfield.
Western.	Cheshire -	Chester, Stockport, Macclesfield, Congle-ton, Nantwich.
	Shropshire or Sa-lop.	Shrewsbury, Wellington, Ludlow, Bridgenorth.
	Herefordshire -	Hereford, Leominster, Ledbury, Ross.
	Monmouthshire -	Monmouth, Pontypool, Newport, Aber-gavenny.
N. Midland.	Nottinghamshire -	Nottingham, Newark, Mansfield.
	Derbyshire -	Derby, Chesterfield, Ashbourne, Mat-lock.
	Staffordshire -	Stafford, Wolverhampton, Burton, Lich-field.
	Leicestershire -	Leicester, Loughborough, Bosworth.
	Rutland -	Oakham, Uppingham.

<i>S. Midland.</i>	Northamptonshire	-	Northampton, Peterborough, ¹ aventry.
	Warwickshire	-	Warwick, Birmingham, Coventry.
	Worcestershire	-	Worcester, Dudley, Kidderminster, Evesham.
	Gloucestershire	-	Gloucester, Bristol, Cheltenham, Stroud.
	Oxfordshire	-	Oxford, Banbury, Henley, Witney, Woodstock.
<i>Eastern.</i>	Buckinghamshire	-	Buckingham, Aylesbury, Wycombe.
	Bedfordshire	-	Bedford, Biggleswade, Dunstable.
	Lincolnshire	-	Lincoln, Boston, Gainsborough, Stamford.
	Huntingdonshire	-	Huntingdon, St. Ives, St. Neots.
	Cambridgeshire	-	Cambridge, Wisbeach, Ely, Newmarket.
	Norfolk	-	Norwich, Yarmouth, Lynn Regis.
	Suffolk	-	Ipswich, Bury St. Edmunds, Woodbridge.
	Essex	-	Chelmsford, Colchester, Harwich.
	Hertfordshire	-	Hertford, St. Albans, Ware.
	Middlesex	-	London, Westminster, Brentford, Uxbridge.
<i>S. Eastern.</i>	Surrey	-	Guildford, Southwark, Lambeth, Croydon, Kingston.
	Kent	-	Maidstone, Greenwich, Canterbury, Woolwich, Deptford.
	Sussex	-	Chichester, Brighton, Hastings, Lewes.
	Berkshire	-	Reading, Windsor, Newbury, and Abingdon.
<i>Southern.</i>	Wiltshire	-	Salisbury, Trowbridge, Bradford, Wilton.
	Hampshire or Hants	-	Winchester, Portsmouth, Southampton.
	Dorsetshire	-	Dorchester, Weymouth, Poole, Bridport.
<i>S. Western.</i>	Somersetshire	-	Bath, Frome, Taunton, Bridgewater, Wells.
	Devonshire	-	Exeter, Plymouth, Devonport, Tiverton, Barnstaple.
	Cornwall	-	Launceston, Redruth, Falmouth, Truro, Bodmin.

Note. — Middlesex and Cheshire have distinct Courts of their own, and are called Counties Palatine. The Counties of Durham and Lancaster are also Palatine.

130. London, the metropolis of Great Britain, is in $51\frac{1}{2}^{\circ}$ north latitude, and contained, in 1861, above 2,800,000 inhabitants. It is the largest city, and the greatest seat of commerce, in the world.

131. The following are some of the principal cities and towns, with their population (in round numbers), according to the census of 1861:—

Liverpool	-	444,000	Preston	-	82,000
Manchester	}	441,000	Brighton	-	77,000
and Salford			Norwich	-	74,000
Birmingham			Nottingham	-	74,000
Leeds	-	296,000	Oldham	-	72,000
Sheffield	-	207,000	Bolton	-	70,000
Bristol	-	187,000	Leicester	-	68,000
Plymouth, with	}	154,000	Blackburn	-	63,000
Devonport			Bath	-	53,000
Newcastle	-	113,000	York	-	40,000
Hull	-	109,000	Rochdale	-	38,000
Portsmouth	-	99,000	Oxford	-	27,000
	-	94,000	Cambridge	-	26,000

PRODUCTIVE INDUSTRY.

132. The free and admirable constitution enjoyed by Great Britain, the intelligence, industry, and perseverance of her people, have raised her to the highest pitch of greatness: her maritime power, her manufacturing industry, and her commerce with every quarter of the globe, are completely unrivalled.

133. *Manufactures.*—*The cotton manufacture*, though not a century old, is the greatest in this or any other country. The spinning and weaving by steam enables cloths to be produced in wonderful cheapness and abundance. It has hitherto given subsistence to a million and a half of people, and yielded a value of 52,000,000*l.* sterling; the exports, including twist and yarn, amounted, in 1860, to above 50,000,000*l.* Manchester, its chief seat, is the greatest manufacturing city in the world, having above 6,000 steam engines, and 17,000 power looms. Preston, Bolton, Blackburn, Oldham, and Stockport, are also great seats of the cotton manufacture.

134. *The woollen manufacture* is the early staple of England, and still employs about half a million of people, yielding a value of 24,000,000*l.* It is carried on chiefly

at Leeds, a large and handsome town, with a most spacious cloth hall; and at Halifax, Huddersfield, and Wakefield. Very fine cloths are made at Stroud, and other places in Gloucester and Wilts; carpets at Kidderminster; blankets throughout the counties of Berks and Wilts; crapes and bombazines at Norwich.

135. *The silk manufacture* was introduced by the persecuted Protestants who left France in the reign of Louis XIV., on the revocation of the edict of Nantes, in 1685, and has gradually continued to increase at Spitalfields (a part of London), Coventry, Macclesfield, and Manchester. Its value is now estimated at 10,000,000*l.* sterling. Hosiery and lace are the staples of Nottingham, Leicester, and other towns in that quarter.

136. *The hardware, firearms, &c.*, made in the very large town of Birmingham, the cutlery at Sheffield, and similar articles at Wolverhampton, Walsall, Dudley, &c., form a great branch, valued at 20,000,000*l.*

137. *Earthenware*, established by Mr. Wedgwood, at Burslem, and in a long range of villages in Staffordshire, called the Potteries, has also become worth above 2,000,000*l.*

138. Northampton is noted for its manufacture of shoes, and Dorsetshire for that of cordage.

139. *Mines.* — The most valuable mines of Britain are those of coal, of which the supply is inexhaustible, mostly in the counties of Northumberland, Durham, and Stafford. In this last, and in Derby, iron occurs also in vast abundance. In Derby and Cumberland is a large supply of lead. Cornwall affords tin, a rare and valuable metal, and copper. In the Scilly, also, there are valuable tin mines.

PRINCIPAL SEAPORT TOWNS.

140. *London*, the metropolis of the British empire, is the largest, the wealthiest, and perhaps the most populous city in the world. It is situated partly and principally on the N. bank of the Thames, in the county of Middlesex, and partly on its S. bank, in the county of Surrey, about

45 miles above the river's mouth at the Nore. It is the seat of numerous and very extensive manufactures. The exports comprise every variety of manufactured articles, amongst which may be mentioned silk, hardware, and cutlery, machinery, watches, carriages, musical instruments, furniture, refined sugar, &c.

141. *Liverpool*, on the west coast, is the next port in importance to London, and greatly surpasses London in the amount of its foreign trade. It carries on an immense trade with Ireland and America.

142. *Bristol*, which once took the lead, is now much behind Liverpool, but still enjoys a flourishing trade.

143. *Newcastle* and *Sunderland*, on the east coast, are distinguished by the export of coal; Hull, by the Baltic trade, and the whale fishery. Smaller ports are Whitehaven, Poole, Lynn, Yarmouth, Whitby. Falmouth and Southampton are daily rising in importance.

144. *Portsmouth* with Portsea, and Plymouth with Devonport, contain dockyards, stores, and works, corresponding to the unrivalled magnitude of the British navy. Deptford and Woolwich on the Thames, Chatham and Sheerness on the Medway, are likewise great stations and depôts.

145. The inland watering places, famous for their salubrious springs, are Bath, Cheltenham, Tunbridge, Harrowgate, Leamington, &c. The sea has places of resort for the summer season on all its coasts; the principal of them are, Brighton, Worthing, Hastings, Margate, Dover, Ramsgate, Scarborough, Weymouth, and Torquay.

146. There are two *archbishoprics*, Canterbury and York; and twenty-five *bishoprics*, including four Welsh bishoprics. The *universities* are Oxford and Cambridge; also a smaller one at Durham; with University and King's Colleges in London.

REMARKABLE INLAND TOWNS.

147. *Manchester* and *Salford*. Grand centre of the

cotton manufacture, inland, but accessible by roads, ~~canals~~, and railways.

148. *Birmingham*. Grand centre of the metallic manufactures. Well situated both for communication and for fuel.

149. *Leeds*. Grand centre of the midland woollen manufacture.

150. *Sheffield*. Grand centre of the steel and cutlery manufacture.

151. *Norwich*. Manufactures of fancy stuffs.

152. *Leicester*. Frame-knitting.

153. *Bolton*. Cotton manufacture.

154. *Coventry*. Fancy silks and ribands.

155. *Wolverhampton*. Metallic manufacture.

156. *Oxford*. The seat of a famous university of the same name. No manufactures.

157. *Cambridge*. University of the same name. The county famous for butter and cream cheeses.

The following Facts are worthy of being remembered by Every Young Person.

London is in latitude $51^{\circ} 30' 49''$; Edinburgh, in $55^{\circ} 57' 19''$; Dublin in $53^{\circ} 23' 13''$.

The whole surface of England is (in round numbers) about 50,000 sq. miles, or 32,000,000 acres:—of Wales, 7400 sq. miles, or 4,750,000 acres:—of Scotland, 30,000 sq. miles, or 19,000,000 acres:—and of Ireland, 32,000 sq. miles, or 20,000,000 acres.

In 1861, the population of England and Wales amounted to 20,000,000; of Scotland, to 3,000,000; and of Ireland, to 5,800,000.

The English counties in which the largest proportion of the inhabitants are engaged in agriculture are Lincoln, Rutland, Essex, Hereford, Huntingdon, Wiltshire, Buckingham, Suffolk, Cambridge, North Riding of York, Bedford, Berkshire, and Kent.

The counties in which the largest proportion of the inhabitants are engaged in trade and manufactures are Lancashire, West Riding of York, Cheshire, Warwick, Nottingham, Middlesex, Leicester, Derby, Stafford, and Worcester.

The annual revenue of the United Kingdom of Great Britain and Ireland is about 70,000,000*l.*, of which about 7 millions are contributed by Ireland.

There are 27 700 trading ships belonging to the United Kingdom.



PORT OF LONDON.



SCOTCH CHIEFS. AND EDINBURGH.



SACKVILLE STREET. DUBLIN.

of 4,600,000 tons, and navigated by about 191,000 men and boys. Of these, 2,000, with a tonnage of 454,000, are steamers.

Almost all the great cities of England are connected by canals, which reach across the kingdom, and extend altogether to above 2600 miles.

Within the last thirty years a vast system of railways has been formed, extending over above 10,800 miles, and having cost above four hundred millions sterling.

The currency or money of the United Kingdom is from 25 to 30 millions of gold and silver coin, and 38 millions of bank and bankers' notes.

The annual exports of British and Irish produce and manufactures from the United Kingdom amount to about 120,000,000*l.* : the imports (not including bullion) exceed 200,000,000*l.*

The national debt is about 800 millions of various stocks, and the interest and charges are about 28½ millions.

The regular army consists of about 200,000 men ; the Royal Navy includes upwards of 600 ships of all classes, above three-fifths of which are steamers.

The laws are made by the estates of the realm, consisting of the Sovereign, about 480 Peers, and 658 members of the House of Commons.

The laws are administered by judges, magistrates, and juries of twelve men, whose verdict must be unanimous. In Scotland, in criminal cases, the jury consists of fifteen persons ; and unanimity is not required, the verdict being decided by the majority.

158. WALES is a mountainous country, with numerous rivers, and is very picturesque, but less productive than England. The county of Glamorgan contains inexhaustible mines of coal and iron, worked to great advantage. The chief mines are at Merthyr Tydvil, the largest town in the principality. Population in 1861, 84,000. Swansea is the main seat of trade, and a much frequented watering-place. Population in 1861, 42,000. The copper mines of Anglesey have been of great value, but are much diminished. Fine flannels are manufactured, the chief market for which is at Welshpool.

159. Wales is divided into twelve counties ; six north and six south. The country is inhabited chiefly by a Celtic race, descended from the ancient Britons, most of whom still speak the Welsh language.

The Northern Counties are,

<i>Counties.</i>	<i>Chief Towns.</i>
Flintshire -	- Flint, St. Asaph.
Denbighshire -	- Denbigh, Wrexham, Llangollen.
Caernarvonshire -	- Caernarvon, Bangor, Conway.
Anglesey -	- Beaumaris, Holyhead.
Merionethshire -	- Harlech, Bala.
Montgomeryshire -	- Montgomery, Welshpool.

The Southern Counties are,

Cardiganshire -	- Cardigan, Aberystwith
Radnorshire -	- Radnor, Presteign.
Pembrokeshire -	- Pembroke, St. David's, Haverford-West.
Caermarthenshire -	- Caermarthen, Kidwelly.
Brecknockshire -	- Brecknock.
Glamorganshire -	- Swansea, Merthyr Tydvil, Cardiff.

Obs. The Island of Anglesey forms one of the Counties of Wales; and from Holyhead, on the western side of this island, is the common passage to Dublin. In 1861, Wales contained 1,112,000 inhabitants.

SCOTLAND.

160. SCOTLAND is, to a great extent, mountainous, but some districts are highly cultivated. It is divided into two parts, the Lowlands and the Highlands.

161. Scotland is divided into thirty-three counties, as under : —

The Northern Counties are ten.

<i>Shires.</i>	<i>Chief Towns.</i>
Orkney -	- Kirkwall, Lerwick.
Caithness -	- Wick, Thurso.
Sutherland -	- Dornoch.
Ross -	- Tain, Dingwall.
Cromarty -	- Cromarty.
Nairn -	- Nairn.
Moray, or Elgin -	- Elgin, Forres.
Banff -	- Banff, Cullen.
Aberdeen -	- Aberdeen, Peterhead.
Inverness -	- Inverness, Fort George.

The Middle Counties are nine.

Perth -	- Perth, Crieff, Dunkeld.
Angus -	- Forfar, Dundee, Montrose, Arbroath.
Mearns, or Kincardine -	- Bervie.
Argyle -	- Inverary, Campbeltown.

Durbarton -	-	-	Dumbarton.
Stirling -	-	-	Stirling, Falkirk, Bannockburn.
Clackmannan -	-	-	Clackmannan, Alloa.
Kinross -	-	-	Kinross.
Fife -	-	-	{ Cupar, St. Andrew's, Kirkcaldy, Dunfermline.

The Southern Counties are fourteen.

Bute -	-	-	Rothsay, Lamlash.
Renfrew -	-	-	Renfrew, Greenock, Paisley, Port Glasgow.
Lanark -	-	-	Glasgow, Lanark, Hamilton.
Linlithgow -	-	-	Linlithgow, Bo'ness.
Edinburgh -	-	-	Edinburgh, Leith, Dalkeith, Musselburgh
Haddington -	-	-	Haddington, Dunbar.
Peebles -	-	-	Peebles.
Berwick -	-	-	Greenlaw, Dunse, Lauder.
Ayr -	-	-	Ayr, Kilmarnock, Irvine.
Wigton -	-	-	Wigton, Stranraer, Portpatrick.
Kirkcudbright -	-	-	Kirkcudbright, Castle Douglas.
Dumfries -	-	-	Dumfries, Annan, Sanquhar.
Selkirk -	-	-	Selkirk.
Roxburgh -	-	-	Jedburgh, Kelso, Hawick, Melrose.

162. The Highlands are occupied by a long chain of lofty, rugged mountains, generally called the Grampians. They are inhabited by a Celtic race, who retain a peculiar language, called the Gaelic. Their ancient dress, consisting of the kilt, has almost fallen into disuse. The population, in 1861, amounted to 3,062,000. The established religion is Presbyterian.

163. Edinburgh is a very elegant capital, with 168,000 inhabitants, regularly built, and finely situated, having the flourishing town of Leith for its port. Glasgow is the chief seat of trade and manufacture, and is by much the most populous city in Scotland, having, in 1861, 395,000 inhabitants. Aberdeen, with 74,000, and Dundee, with 90,000 inhabitants, both on the east coast, and Greenock, with 42,000, on the west, are flourishing ports. Scotland is distinguished for eminence in literature, and has four universities; those of Edinburgh, Glasgow, Aberdeen, and St. Andrew's.

164. Oats are the chief grain; sheep and cattle are abundantly reared, and sent to England. There are ex-

tensive manufactures of cotton and linen, the former chiefly at Glasgow and Paisley (a town of 50,000 inhabitants), the latter at Dundee and Dunfermline. The herring, cod, and whale fisheries are considerable.

165 *The lakes* are numerous, and very picturesque. The chief are Loch Lomond, Loch Ness, Loch Tay, Loch Broom, Loch Awe, and Loch Katrine. The highest mountains are the Grampians, the most elevated of which is Ben Nevis; also Ben Macdhui, Ben Wyvis, and Cairngorm.

166. *The islands* adjoining Scotland are Shetland, the Orkneys, the Hebrides (*Hebudes*), or Western Islands, and those of Arran and Bute, which form one of the counties.

IRELAND.

167. IRELAND.—The surface of this country is varied by ranges of mountains, and broad extensive plains; the central portion is occupied by a vast level, extending quite from sea to sea. The coast, particularly on the west and south-west, is deeply indented with bays, gulfs, and arms of the ocean, which form some noble harbours. The country is fertile, and, though the farms are too much subdivided, and the cultivators poor, it exports large quantities of grain, live stock, salted beef, pork, and linen.

168. Ireland is divided into four large provinces; viz. Ulster northward, Leinster eastward, Munster southward, and Connaught westward; and contained, in 1861, 5,764,000 inhabitants.

The Province of Leinster contains twelve Counties.

Dublin	-	Dublin.	West Meath	{	Mullingar.
Louth	-	{ Drogheda.			Athlone.
		{ Dundalk.	King's County	-	Philipstown.
Wicklow	-	{ Wicklow.	Queen's Co.	-	Maryborough.
		{ Arklow.	Kilkenny	-	Kilkenny.
Wexford	-	- Wexford.	Kildare	-	Naas & Athy.
Longford	-	- Longford.	Carlow	-	Carlow.
East Meath	-	- Trim.			

The Province of Ulster contains nine Counties.

Down	-	{ Downpatrick.	Antrim	-	{ Carrickfergus.
		{ Newry.			{ Belfast.
Armagh	-	- Armagh.	Tyrone	-	- Omagh
Monaghan	-	- Monaghan	Fermanagh	-	- Enniskillen
Cavan	-	- Cavan.	Donegal	-	- Lifford
Londonderry	-	- Derry.			

The Province of Connaught contains five Counties.

Leitrim	-	- Leitrim.	Sligo	-	- Sligo.
Roscommon	-	- Roscommon.	Galway	-	- Galway.
Mayo	-	- Newport.			

The Province of Munster contains six Counties.

Clare	-	- Ennis.	Limerick	-	- Limerick.
Cork	-	- Cork, Kinsale.	Tipperary	-	- Clonmel.
Kerry	-	{ Tralee.	Waterford	-	- Waterford.
		{ Killarney.			

169. The highest mountains in Ireland are Macgillicuddy's Reeks, in the county of Kerry; and the mountains of Wicklow, in the county of that name. The principal rivers are the Shannon, the Barrow, the Blackwater, the Boyne, the Liffey, the Bann, and the Lee. The principal lakes are Neagh, Erne, Corrib, Ree, Derg, and Killarney. The province of Ulster contains extensive linen manufactures.

170. The established religion in Ireland is the same as the English Church: there are 2 archbishopricks — those of Armagh and Dublin — and 10 bishopricks. But the great majority of the people are Catholics and Protestant dissenters. There are 2 Universities — Trinity College, in Dublin, which is confined to Protestants; and the Queen's University, which embraces the three Queens' Colleges lately established at Cork, Galway, and Belfast, and designed for mixed education, without regard to religious opinions. *Dublin*, the capital of Ireland, is situated on the Liffey, and has 296,000 inhabitants. The other principal ports and seats of commerce are Cork and Waterford in the south, Limerick and Galway in the west, Belfast and Londonderry in the north.

FRANCE.

171. This extensive, fertile, and populous country occupies a commanding situation in the centre of Europe, and has always been distinguished by the military prowess

of its armies, the ambitious spirit of its government, the ingenious but volatile character of its inhabitants.

172. France, being situated in the middle of the temperate zone, enjoys a mild and agreeable climate. The air in the south is considered so very salubrious, that it has become the resort of many invalids from northern countries.

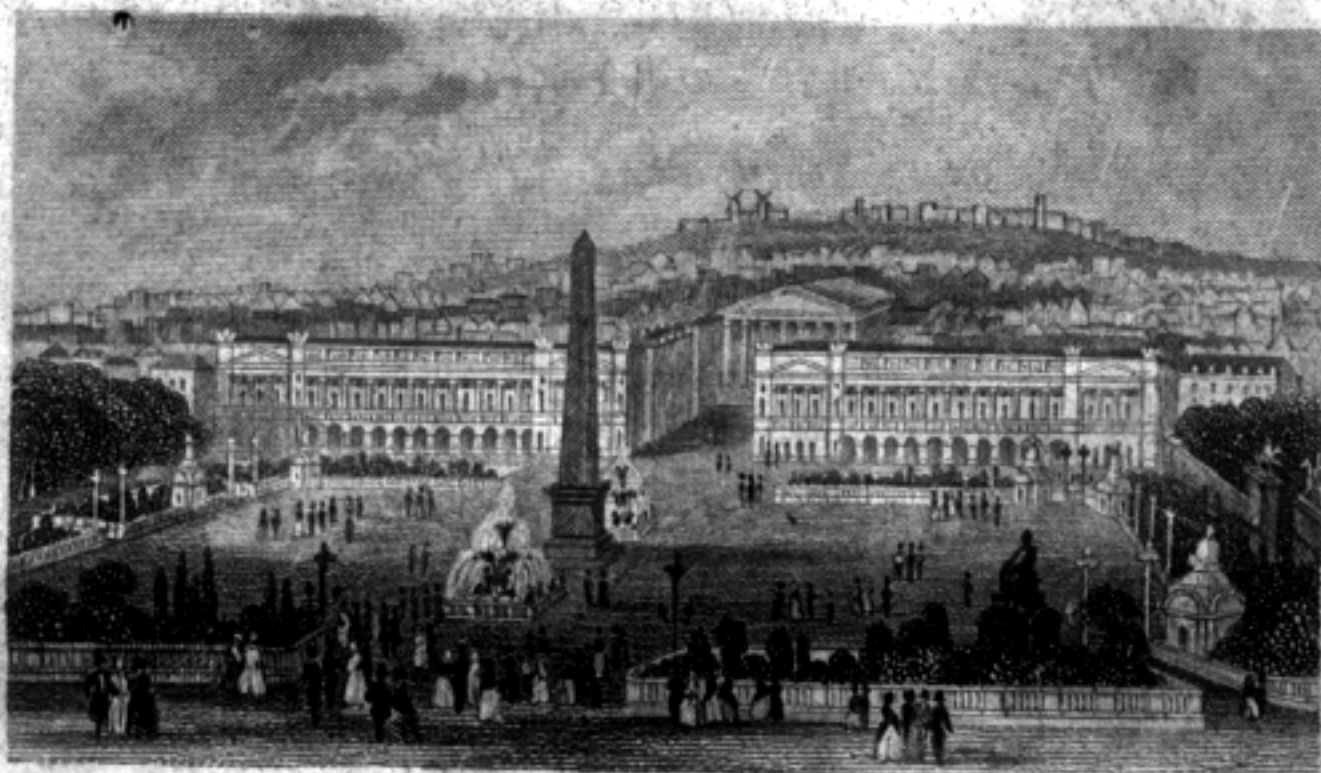
173. The principal mountains are, the Alps, which divide it from Italy; and the Pyrenees, which divide it from Spain. In the interior are the Cevennes, and the mountains of Auvergne.

174. The chief rivers are, the Rhone, the Garonne, the Loire, the Seine, and the Somme. The Rhine is a boundary between France and Germany only on the eastern side, near Switzerland.

175. Numerous canals have been formed in France within the last few years. The earliest and greatest is the canal of Languedoc, uniting the Garonne with the Mediterranean. Railroads traverse the whole country from Havre to Strasburg, and from Calais to Marseilles. Agriculture is not very flourishing. The wines of France, particularly those of Champagne, Burgundy, and Bordeaux (called *Claret*), are the most generally esteemed of any, and are exported to a large amount. Her silk manufactures are superior to those of any other nation; she excels also in woollens, cottons, and jewellery. The total annual value of the exports exceeds 131,000,000*l.*, and that of imports 110,000,000*l.*

176. Near Toulon are the isles of Hières. Those of Rhé and Belleisle are in the Bay of Biscay. Corsica gave birth to Napoleon Buonaparte.

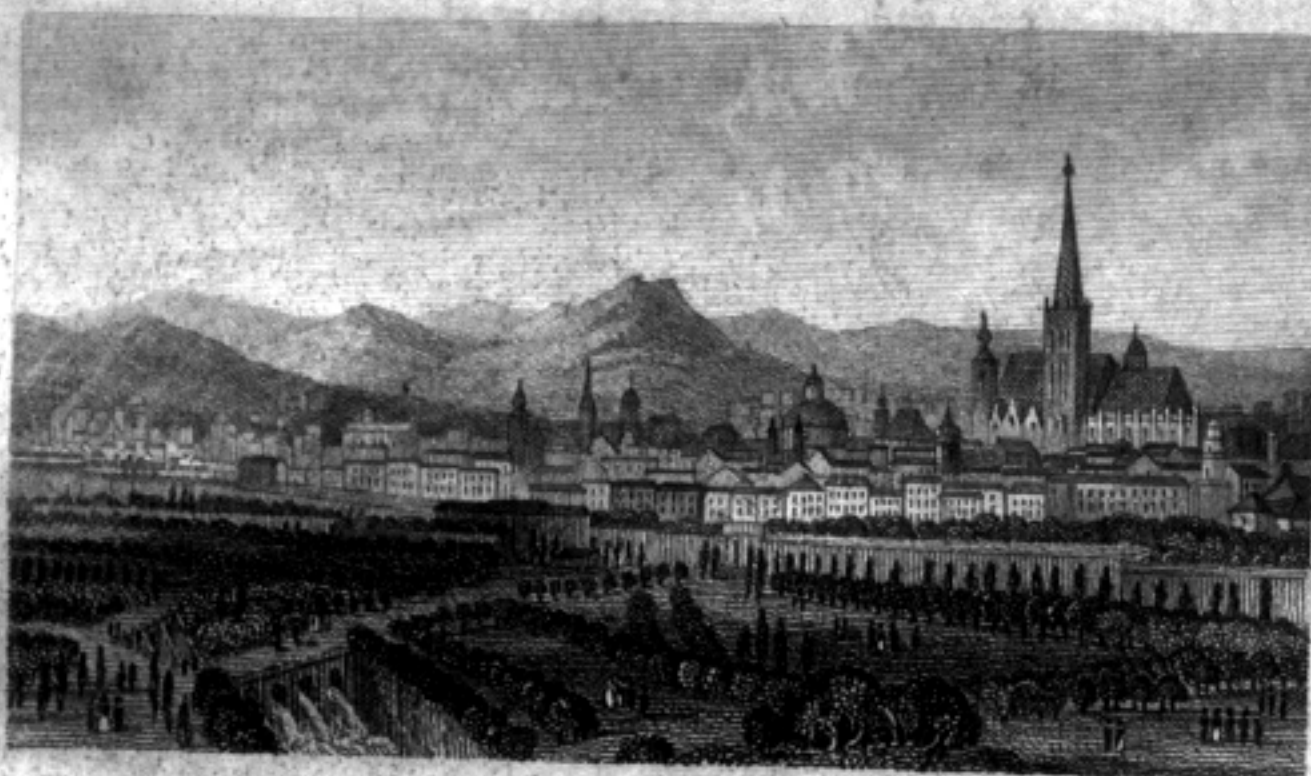
177. France was formerly divided into 32 provinces; since the revolution of 1789 it has been divided into 86 departments, recently increased to 89 in number, named after the rivers, the mountains, or other remarkable features. These would be too long to enumerate; but the following is a list of the principal cities, with their population: —



PLACE DE LA CONCORDE. PARIS.



BULL FIGHT. SPAIN.



VIENNA.

Cities.	Population.	Cities.	Population.	Cities.	Population.	Cities.	Population.
Paris	1,698,000	Toulouse	113,000	Amiens	59,000	Limoges	51,000
Lyons	319,000	Rouen	103,000	Nismes	57,000	Orleans	51,000
Marseilles	261,000	St. Etienne	92,000	Metz	57,000	Cacn	39,000
Bordeaux	163,000	Toulon	85,000	Rheims	56,000	Brest	35,000
Lille	132,000	Strasbourg	82,000	Montpellier	52,000	Versailles	29,000
Nantes	113,000	Havre	74,000	Angers	52,000	Dijon	26,000

Obs. The population exceeds 37,000,000 ; but, during the reign of the first Napoleon, the French empire, comprehending Belgium and Piedmont, had more than forty millions.

178. Paris is the largest city in Europe next to London. Many of the streets are narrow and dirty, but the public structures are magnificent. This city was embellished by the Emperor Napoleon with many splendid buildings and triumphal structures, and enriched with immense collections of works of art, amassed in Italy, Germany, Prussia, Holland, and Belgium; but these, after the taking of Paris in 1815, were restored by the allied sovereigns to their lawful owners.

Obs. Paris rises on both sides of the Seine, in a pleasant and healthy situation, with delightful environs. It is divided into three parts ; the Town (*ville*) on the north, the City in the middle, and that part called the University on the south. It is one third smaller than London. The houses are chiefly built of freestone. The banks of the Seine present noble quays; and the public buildings are not only elegant in themselves, but are placed in open and commanding situations. The Louvre is among the best specimens of modern architecture, and contains still a superb collection of painting and sculpture; the Palais Royal, the Tuileries, and the Luxemburg are also handsome palaces. Nôtre Dame Cathedral is a noble Gothic structure; while the church of St. Geneviève, now called the Pantheon, and the Madeleine, are splendid Grecian edifices. The Hospital of Invalids, with the tomb recently erected for Napoleon, the Chamber of Deputies, the Exchange, and the Triumphal Arch, are also highly ornamental. The National Library is considered the largest in the world ; and the Garden of Plants contains an almost unrivalled collection of objects of natural history. Paris exceeds London in magnificence, but yields to it in size, cleanliness, and convenience.

179. Lyons ranks second to Paris, and is the greatest seat of the silk manufacture in Europe. This flourishes also at Nismes, which is adorned with some fine Roman edifices. In the north, Rouen and St. Quentin have great manufactures of cotton ; Amiens and Abbeville of

very strong fortress. Amiens, Rheims, and Strasburg, are adorned with remarkably fine cathedrals. Orleans, Tours, Toulouse, ranked formerly almost as capitals. Havre, at the mouth of the Seine, Nantes of the Loire, and Bourdeaux of the Garonne, have acquired great prosperity by the trade of those rivers. Marseilles, near that of the Rhone, is the chief seat of Mediterranean commerce. Toulon is the greatest naval arsenal in that sea, as Brest is on the ocean. Other ports of consequence are Rochelle, Rochefort, Dieppe, and Dunkirk. Montpellier is noted for the salubrity of its climate.

Obs. In 1788, King Louis the Sixteenth was induced to call an assembly of the States General of the kingdom, which had not been convoked since 1614. This was, in fact, the commencement of that memorable revolution, which, after promising to France a well regulated government, and the enjoyment of rational liberty, was soon sullied by the murder of the king and queen, and by a scene of sanguinary tyranny unparalleled in the history of the civilised world. During the long wars which ensued with all the European states, Buonaparte attained the supreme power, and was crowned emperor of France and king of Italy in 1804. He defeated all the coalitions against him, formed by the other powers, and conquered nearly the whole of the continent of Europe. But his army being overthrown in Russia, in 1812, and driven from Germany in the following year, he was obliged, in 1814, to abdicate his crown, and was allowed to reside in the isle of Elba; upon which the brother of the late king ascended the throne by the name of Louis the Eighteenth, his nephew the Dauphin, called Louis the Seventeenth, being dead. Buonaparte, however, escaped from Elba and returned in 1815, and Louis was obliged to flee to the Netherlands. Buonaparte again ascended the throne; but all the powers of Europe declaring against him, and his army having been totally defeated at Waterloo, he was again obliged to abdicate, and surrendered himself to England. In conformity with a convention between Russia, Great Britain, Austria, and Prussia, he was sent to St. Helena (where he died in 1821), and Louis the Eighteenth again recovered the throne of his ancestors. His successor Charles X., however, having attempted to alter the constitution, was dethroned in 1830, and Louis Philippe, formerly duke of Orleans was elected in his room. In the month of February, 1848, Europe was astonished by a Revolution more sudden and unexpected than any recorded in history. A party who, under the name of Reform, had long laboured for republican institutions, seized the opportunity of a popular movement against the ministry to direct its violence against the kingly authority. Louis Philippe, thinking it vain to resist, as he could not rely on the fidelity of the troops, abdicated in favour of his grandson the Count of Paris, and fled to England. The

Duchess d'Orleans presented her son to the Chamber of Deputies ; but the instigators of the revolt, elated by success, refused any compromise with royalty, and constituted a Provisional Government, which at once declared France a Republic. On the 4th of May the National Assembly of France was opened, and an executive commission was appointed ; but in consequence of the dangers which threatened the State from the violence of the extreme party, on the 23rd of June General Cavaignac was nominated dictator, and the next day the streets of Paris were deluged with blood in a struggle between the troops and the populace. After some months of fearful uncertainty and excitement, it was determined that the future government of France should be entrusted to a President elected by universal suffrage for a period of three years, and that there should be a single chamber of representatives elected by the departments, and paid by their constituents.

On the 10th December, 1848, Louis Napoleon Buonaparte, nephew of the emperor Napoleon Buonaparte, was elected, by a large majority, first president of the French Republic ; he had previously been permitted to return to France and take his place as representative of the department of the Seine. An obstinate struggle for power soon commenced between the president of the Republic and the majority of the Legislative Assembly, until by a presidential decree, executed by the army and followed by the arbitrary banishment of several of the members, the Assembly was dissolved and a consultative commission appointed. By a second appeal to the people these despotic acts were confirmed, and the powers of the president made almost absolute, and to continue for ten years. From the new position into which he was installed at Notre Dame on 1st June, 1852, the steps to Imperial power were easy and rapid. After a progress through various parts of France, and a reference to the senate whether the wishes of the people on the subject should be collected, a *senatus consultum* was issued to be ratified by the French people. The votes having been taken by ballot throughout France, a vast majority seemed favourable to the restoration of an Imperial dynasty, and Louis Napoleon was proclaimed Emperor of the French under the title of Napoleon III., 4th December, 1852, and was married on the 30th of January, 1853, to Mademoiselle de Montijo, Duchess of Teba, in the Cathedral of Notre-Dame.

RUSSIA.

180. The Russian empire, the most extensive in the world, comprehends a large portion of Europe, all the northern parts of Asia, and a considerable district in North America. The European part of Russia is in general level, scarcely possessing in its interior a single range of mountains. The most distinguishing feature in the appearance of the country is its immense forests

which occupy the northern part, and its extensive steppes or plains in the south.

181. The only considerable mountains are the Ural Chain, running from north to south, and dividing European Russia from Siberia; the chain of Olonetz, near the White Sea; and the mountains in the Crimea.

182. The principal rivers are, the Volga, which, after a winding course of two thousand miles, discharges itself into the Caspian Sea; the Don, the Neva, the Dnieper, the Dniester, and the Dwina; and the Vistula in Poland.

183. The entire population of the empire is about 60 millions. Of these, forty-four millions are slaves or peasants. Nearly two millions consist of Cossacks, Baschkirs, and colonists, holding their lands on condition of military service. The chief part of the population of European Russia is in a state of bondage, the peasantry being bought and sold with the land. The government is said to be desirous of emancipating the peasants; but the prejudices of the nobles, and the ignorance of the peasantry themselves, are obstacles not to be conquered at once, even by an absolute prince. The wealth of the nobles is estimated by the number of their boors or peasants.

184. The extent of European Russia is estimated at 2,000,000 square miles.

Obs. 1. The mineral wealth of Russia is very great, and includes gold, platinum, iron, and copper. The two former are found principally in the Ural Mountains; but most of the gold mines are situated on the Asiatic side of the chain. The Altai Mountains, in Siberia, or Asiatic Russia, also supply a great quantity of gold, as well as silver and lead.

Including Poland and the province of Finland, European Russia embraces altogether fifty-one governments. It is bounded on the north by the Arctic Ocean; on the east by the Ural Mountains; on the south by Mount Caucasus and the Black Sea; and on the west by Turkey, Austria, Prussia, the Baltic Sea, and Swedish Lapland.

By the partitions of Poland, in 1772, 1793, and 1795, Russia acquired three fifths of that kingdom, with a population of 6,700,000 inhabitants; and, after the overthrow of the power of Buonaparte, the central part of Poland, which he had taken from Prussia and Austria, and formed into the Grand Duchy of Warsaw, was declared by the Allies an independent kingdom, with the Emperor of Russia for king. But in 1832, the Emperor Nicholas decreed that the king-

dom of Poland should henceforth form an integral part of the Russian empire ; so that Poland can no longer be considered as a kingdom, though still bearing that name. The so-called Kingdom of Poland has an area of about 48,000 English square miles, and a population of 4,800,000. The total number of Poles included amongst the population of Russia is much greater than this.

Obs. 2. In 1812, by treaty with Russia, the boundary of Turkey, on the north-east was formed by the rivers Pruth and Danube ; but by the treaty of Paris in 1856 Russia was obliged to withdraw from these rivers, and to give up a great portion of Bessarabia.

185. The Russian government is despotic. The sovereign has the title of Emperor, Czar, and Autocrat of all the Russias. Siberia is used as a place of banishment, at the pleasure of the sovereign.

186. The climate of Russia in the northern parts is very severe ; but in the southern districts, and on the shores of the Black and Caspian Seas, it is temperate and agreeable, and the soil fruitful.

187. The principal towns are, Petersburg, the modern capital, in $59^{\circ} 56'$ of north latitude ; Moscow (properly *Mosqua*), the ancient capital ; Archangel, a port on the White Sea ; Odessa and Cherson, on the Black Sea ; Warsaw, the capital of Poland ; and Riga, a great port on the Baltic.

St. Petersburg, the imperial residence, was founded by the Czar Peter the Great, in 1703, in a low marshy spot of ground on the river Neva. Of all the capital cities of Europe it is that which at the first sight strikes the eye of a stranger with the greatest surprise ; the breadth and cleanliness of the streets, the elegance of the buildings, the noble canals, and the regularity of the edifices on their banks, present a most impressive spectacle. "The united magnificence of all the other cities of Europe," says a modern traveller, "could but equal St. Petersburg ; and there is nothing little or mean to offend the sight : all is grand, extensive, wide, and open ; and the streets, which are spacious and straight, seem to consist entirely of palaces. The buildings are lofty and elegant ; the public structures, quays, piers, ramparts, &c., are all composed of masses of solid granite, calculated to endure for ages. At the origin of the city, and long afterwards, the houses were all of wood, and even at the end of the eighteenth century the proportion of wooden houses to that of houses of stone or brick was as two to one ; but this disproportion has greatly diminished : all new houses are of brick, and no wooden house is allowed to be constructed, nor any, if burnt down, to be rebuilt." St. Petersburg contains above 470,000 inhabitants, of whom 20,000 are foreigners.

Moscow, the ancient capital, was burnt during the invasion of the French in 1812, but has since been rebuilt. Before that event it contained about 3000 stone houses, and 6900 of wood: only 525 of the former, and 1797 of the latter, escaped; but, as soon as a peace was concluded, the Russians laboured so diligently in repairing the city, that at the death of the Emperor Alexander it was as populous as ever, containing nearly 12,000 houses, 7000 shops, and about 350,000 inhabitants. The churches and chapels, which were 700 before the fire, are now much less numerous, and a great many of the palaces of the nobility have not yet been rebuilt.

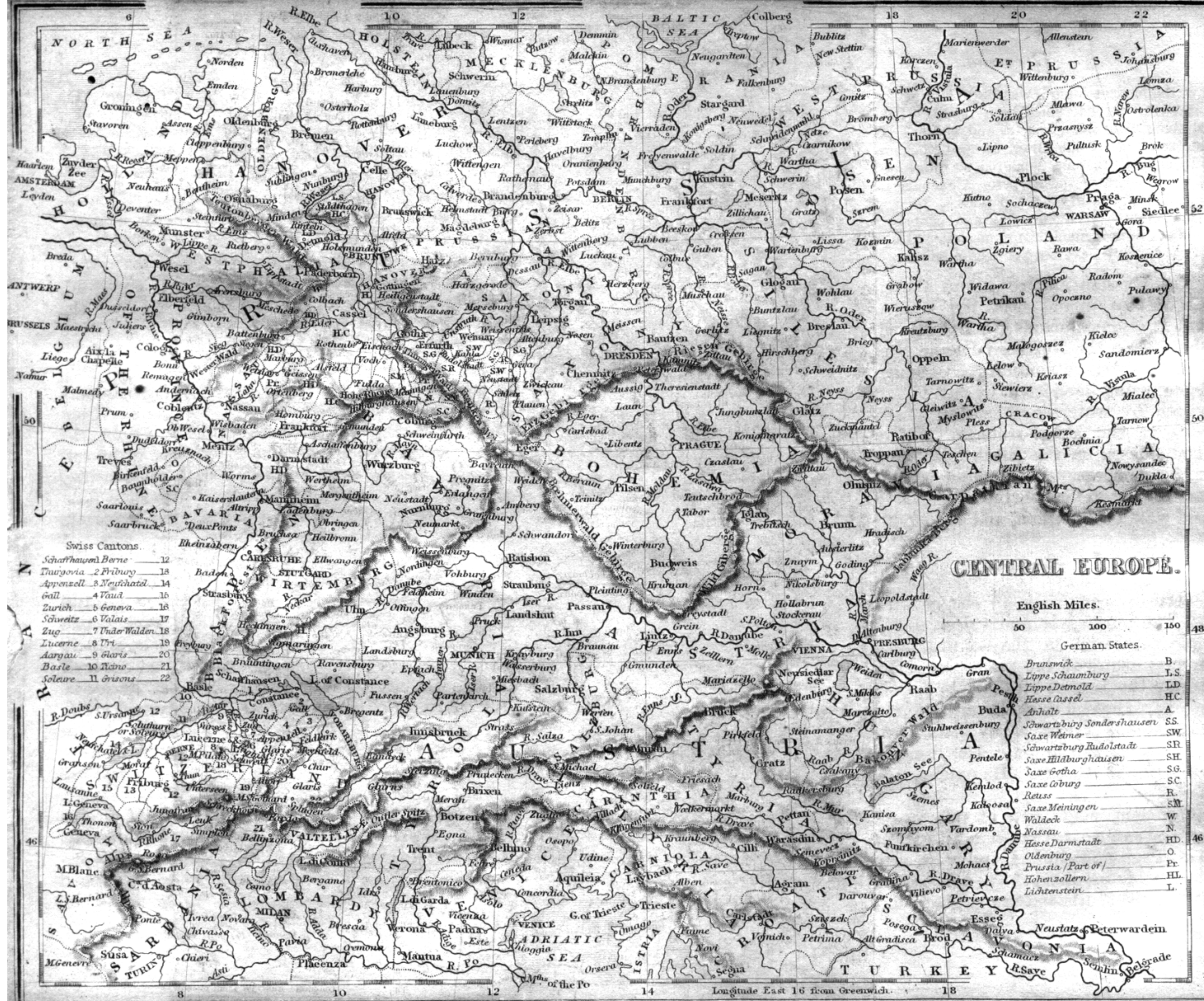
188. The Russian empire enjoys the commercial advantages of two inland seas, the Black Sea and the Caspian. It also commands the Baltic, and has maritime establishments on the Northern Pacific Ocean.

189. The inland navigation is extensive, the Baltic and Caspian being connected by canals; and goods may be conveyed by water, with a few interruptions, from Petersburg to the Mediterranean. Petersburg on the Baltic, and Odessa on the Black Sea, are the great emporiums of commerce. From these ports vast quantities of wheat, timber, tallow, hemp and flax, potashes, furs, honey and wax, coarse linen, and sail cloth, are exported.

GERMANY.

190. Germany comprises all the countries of Central Europe. The surface is much diversified, and presents remarkable contrasts: in the south-east and east it is mountainous; many of the mountain ridges are covered with forests; the largest of these is the Black Forest in Würtemberg. Beyond these mountains, northward to the sea, there extends a vast sandy plain, forming a portion of that great level which reaches from the frontier of Asia to the Bay of Biscay. Its extent is about 250,550 square miles.

191. The component parts of this vast region are so numerous and extensive, that we must expect considerable diversities of soil and climate, and consequently great variety of vegetable products. Though occupied by rugged mountains in the south, and sandy plains in the north, the



CENTRAL EUROPE.

English Miles.

German States.

Brunswick	B.
Lippe Schaumburg	I.S.
Lippe Detmold	LD.
Hesse Cassel	HC.
Anhalt	A.
Schwarzburg Sondershausen	SS.
Saxe Weimar	SW.
Schwarzburg Rudolstadt	SR.
Saxe Hildburghausen	SH.
Saxe Gotha	SG.
Saxe Coburg	SC.
Reuss	R.
Saxe Meiningen	SM.
Waldeck	W.
Nassau	N.
Hesse Darmstadt	HD.
Oldenburg	O.
Prussia (Part of)	Pr.
Hohenzollern	HL.
Lichtenstein	L.

Longitude East 16 from Greenwich.

whole country is, generally speaking, productive; the best soils lie between the rugged elevations in the south and the low flats in the north. There are extensive vineyards in Austria and Hungary; but the wine is of inferior quality; that produced on the banks of the Rhine and its tributaries is in high request. The valleys in the south produce excellent wines and fruits. Upon the plains of the north corn is extensively grown, particularly wheat, which is extensively cultivated in Poland, Austria, and Bavaria, and buck-wheat upon the sandy tracts of North Germany; large quantities are annually exported. Barley and oats are reared throughout the country, and maize abounds in the south districts. Flax is raised in immense quantity, and rape, from which oil is expressed, is also largely grown.

192. The forests, which cover about one-third of the whole surface, supply an abundance of timber for building and for exportation, and also for fuel, both for domestic purposes and the smelting of ores.

193. The rivers which intersect the country in all directions, are many and important, and amongst the largest in Europe; they constitute an extensive water system, affording great facilities for internal communication. The principal are the Danube, the largest in Europe, flowing through Bavaria, Austria, and Hungary; the Rhine, from Switzerland to Holland; the Elbe, through Prussia and Saxony; the Oder, through Silesia and Brandenburg; the Weser, through Westphalia; the Mayn, through Franconia, into the Rhine. Besides the rivers there are numerous lakes connected with them, such as the lakes of Bavaria and Austria.

194. In the rearing of live stock, hogs form an important feature: it is said that nearly ten millions of them are annually slaughtered, their flesh forming the principal animal food of the inhabitants. Sheep are extensively reared, and their wool, which is of superior quality, is largely exported. Mining is a great source of wealth in Germany; gold, tin, copper, lead, iron, mercury, and cinnabar, cobalt, calamine, arsenic, bismuth, antimony,

magnesia, salt and coal, are produced in several parts. The principal mining districts are in the north-east extremity of the Alps, in the Erzgebirge Mountains in Saxony, and the Hartz Mountains in Hanover.

195. There are upwards of 1,000 mineral springs in the country, possessing medicinal properties.

196. Manufacturing industry is considerable, and is rapidly increasing. But the Germans are unable to withstand the powerful competition of Great Britain, whose coal and superior machinery enable her to undersell rivals in every market. It is with great difficulty the Germans uphold their manufacture of linen fabrics, so long and justly celebrated. The manufacture of cotton fabrics is increasing, and the woollen manufacture is in a flourishing state. Earthenware and glass are extensively made; the latter manufacture is carried to great perfection in Bohemia.

197. The foreign commerce of Germany is limited it is confined chiefly to the shipping towns of Hamburg, Lubeck, and Bremen. Internal commerce is carried on by means of the numerous rivers and several lines of railway; and there exists an extensive land trade with Russia, Italy, Switzerland, France, and the Netherlands. The coast on the Baltic is adapted for commerce with Northern Europe, while the ports of Trieste and Fiume, on the Adriatic, trade with the south.

POLITICAL DIVISIONS OF GERMANY.

198. Austria (Empire, Absolute Monarchy) comprises the provinces of

	Chief Towns.		
Upper Austria	-	-	Lintz, on the Danube.
Lower Austria	-	-	Vienna, on the Danube.
Tyrol	-	-	Inspruck, on the Inn.
Styria	-	-	Gratz, on the Mur.
Carinthia	-	-	Klagenfurt.
Carniola	-	-	Laybach.
Illyrian Coast	-	-	{ Trieste, on the N.E. extreme of Adriatic Sea.

					Chief Towns.
Bohemia	-	-	-	-	Prague, on the Moldau.
Moravia	-	-	-	-	{ Brunn, at confluence of the Schwarza and the Zwittawa.
Silesia	-	-	-	-	{ Troppau, on the Oppa, branch of the Oder.
Galicia	-	-	-	-	Cracow, on the Vistula.
Dalmatia	-	-	-	-	Zara, on the Adriatic.
Hungary with the military frontier				{	Ofen (Buda), on the Danube. Pesth.
Transylvania	-	-	-	-	{ Clausenburg, or Kolosver, on Little Szamos.
Croatia and Slavonia	-	-	-	-	{ Agram, on the Save, Peterwaradein, on the Danube.
Venetia	-	-	-	-	{ Venice, on islands in N. W. of Adriatic.

Prussia (Kingdom, Limited Monarchy) comprises the provinces of

					Chief Towns.
Prussia Proper	-	-	-	-	Konigsberg, on the Pregel.
Posen	-	-	-	-	{ Posen, at the confluence of Pronza and Warta.
Brandenburg	-	-	-	-	Berlin, on the Spree.
Pomerania	-	-	-	-	Stettin, on the Oder.
Silesia	-	-	-	-	{ Breslau, at the confluence of Ohlau with Oder.
Saxony	-	-	-	-	Magdeburg, on the Elbe.
Westphalia	-	-	-	-	{ Munster, on the Aa, branch of the Ems.
Rhine Province	-	-	-	-	Aix-la-Chapelle. Cologne.

			Government.	Chief Towns.
Bavaria	-	Kingdom	Lim. Mon.	Munich, on the Iser.
Saxony	-	"	"	Dresden, on the Elbe.
Württemberg	-	"	"	{ Stuttgard, on Nesen, tribu- tary of Neckar.
Hanover	-	"	"	{ Hanover, on the Leine, branch of the Weser.

The Minor German states are —

	States.	Government.	Chief Towns.
Baden	Grand Duchy	{ Constitutional.	Carlsruhe, near the Rhine, in plain of Haardwald.
Hesse Darmstadt	"	{ "	Darmstadt, on the river Darm.
Hesse Cassel	Electorate	{ "	Cassel, on the Fulda.

States.	Government.	Chief Towns.
Luxemburg, Grand Duchy	Constitutional	Luxemburg, on Alzette, tributary of the Sur.
Mecklenburg Schwerin "	Representative.	Schwerin, on lake Schwerin.
Mecklenburg Strelitz "	"	Strelitz.
Oldenburg and Knipphausen	Constitutional.	Oldenburg, on Hunte, tributary of Weser.
Saxe Weimar - "	"	Weimar, on the Ilm.
Holstein - Duchy	"	Gluckstadt, on the Elbe.
Nassau - "	"	Wiesbaden.
Brunswick - "	"	Brunswick, on the Ocker.
Saxe-Coburg-Gotha "	"	Gotha, on the Leine.
Saxe-Altenburg "	"	Altenburg, near the Pleisse.
Saxe-Meiningen "	"	Meiningen, on the Werra.
Anhalt-Dessau - Koethen	Representative.	Dessau, on the Muldau.
Anhalt-Bernburg "	"	Bernburg, on the Saale.
Schwartzburg-Sonderhausen Principality	Absolute.	Sonderhausen, on the Wipper.
Schwartzburg-Rudolstadt Principality	Representative.	Rudolstadt, on the Saale.
Lichtenstein - Duchy	Constitutional	Lichtenstein, on the Rhadutz.
Lippe-Schaumburg "	"	Buckeburg, on the Aue.
Lippe-Detmold - "	Representative.	Detmold, on the Werra.
Reuss, Elder Branch "	"	Greitz, on the Elster.
Reuss, Younger Branch "	"	Schleitz.
Waldeck - - "	"	Korback, or Corbach, on the Itter.

Hohenzollern, formerly an independent principality, was ceded to Prussia in 1849.

199. Germany, as we have seen, consists of several kingdoms, grand duchies, duchies, principalities, and free cities, &c., each independent as to the arrangement of its internal affairs; but, in regard to foreign nations, united in a league, called the Germanic Confederation, the objects of which are, the maintenance of the external and internal safety of Germany, and the independence and inviolability of the confederated states.

Obs. The affairs of the Confederation are confided to a Federative Diet, in which all the members may vote by their plenipotentiaries,

1. Austria; 2. Prussia; 3. Bavaria; 4. Saxony; 5. Hanover; 6. Würtemberg; each four votes. 7. Baden; 8. Hesse-Cassel; 9. Hesse-Darmstadt; 10. Denmark, for Holstein; 11. Holland, for Luxemburg; each three. 12. Brunswick and Nassau; each two. 13. Mecklenburg-Schwerin and Strelitz, each two. 14. Saxe-Weimar, Saxe-Coburg-Gotha, Saxe-Meiningen, and Saxe-Altenburg, each one. 15. Oldenburg, Anhalt-Dessau, Anhalt-Bernburg, Anhalt-Köthen, or Cöthen, Schwartzburg-Sondershausen, Schwartzburg-Rudolstadt; each one. 16. Lichtenstein, Waldeck, Elder and Younger Reuss, Schaumburg-Lippe, Lippe-Detmold, each one. 17. The four free cities of Frankfort, Bremen, Hamburg, and Lubeck, each one: in all sixty-nine votes.

Austria presides in the Federative Diet, which sits at Frankfort. This distribution of votes, reducing the number of members to 17, applies to all ordinary discussions; questions being decided by a majority of the 17 votes: but on extraordinary occasions, the Diet forms itself into a general assembly, in which each state votes individually, and a majority of two thirds of the 69 votes is required for a decision.

200. The Germans are brave, persevering, and industrious. The Protestant religion was first introduced there by Luther, and is professed in most of the northern districts; but the south is generally Catholic. The population of Germany is estimated at about 41 millions.

AUSTRIA.

201. Austria is an extensive empire, having its original seat in Germany; though its largest territories are now beyond the limits of that country. Its sovereign was formerly styled emperor of Germany and king of the Romans, and claimed a certain jurisdiction over the Germanic body; but Napoleon compelled him to renounce these titles, and to content himself with that of Emperor of Austria. On the overthrow of Napoleon, however, he became president of the Diet. Belgium, which had long appertained to Austria, was lost during the war; but she received, in compensation, the territory of Venice.

202. Austria consists now, within Germany, of Austria, Bohemia, and Moravia; without it, of Hungary with its appendages, of Galicia, and the Italian territory of

Venetia. The population of the whole empire, in 1857, was 35,000,000; and within the limits of the German confederation, 13,000,000. The Catholic religion prevails; but there are nearly 6,000,000 attached to the Greek church, chiefly in Hungary and Gallicia, above 3,000,000 Protestants, and 600,000 Jews.

203. The Archduchy of Austria lies in the south-east of Germany, and consists of a fine plain watered by the Danube, and of the mountainous countries of Styria, Carinthia, Carniola, Istria, and the Tyrol. These countries contain upwards of 5,000,000 people. They abound in minerals, particularly mercury. The chief cities are, Vienna, the capital of the empire; Lintz; Gratz, the capital of Styria; and Trieste, the only sea-port, on the Adriatic, with 70,000 inhabitants, and a flourishing trade. The peasantry of the Tyrol are distinguished for bravery.

Obs. Vienna lies on the S.W. side of the Danube, in a fertile plain. The manufactures are little remarkable, though some inland commerce is transacted on the noble stream of the Danube. The number of inhabitants exceeds 470,000. The suburbs are far more extensive than the city, standing at a considerable distance from the walls. The houses are generally of brick, covered with stucco. The chief edifices are, the metropolitan church of St Stephen, the imperial palace, library, and arsenal, the house of assembly for the states of Lower Austria, the council-house, the university, and some monasteries. The Prater, or imperial park, is the principal promenade and place of recreation.

204. Bohemia and Moravia are fertile and highly cultivated countries, in the heart of Germany. The former, in 1857, contained 4,800,000 inhabitants; the latter, with a part of Silesia still belonging to Austria, 2,450,000. Bohemia has extensive manufactures of linen and glass, also some of woollen and cotton. It is surrounded by a circuit of mountains, which are rich in minerals. Prague, the capital, is a handsome old city, with many palaces of the nobility, and 143,000 inhabitants. Brunn, the capital of Moravia, is flourishing, and strongly fortified. Population, 58,000.

205. Hungary, to the east of Austria, is a large kingdom,

containing about 12,000,000 inhabitants. It consists of a fruitful plain, watered by the Danube and many of its tributaries, and bounded on the north by the Carpathians. Its wines, especially Tokay, enjoy the highest reputation; and the mines of Schemnitz and Cremnitz, yielding gold, silver, copper, and iron, are among the richest in Europe. The nobility enjoy great privileges, and are a brave and honourable class of men; but the peasantry are poor, and held in great subjection. In 1848 the Hungarians endeavoured to throw off their allegiance to Austria, but were completely subdued in 1849, by the united powers of Austria and Russia. Buda and Pesth, on opposite sides of the Danube, having together a population of 187,000, now form the conjoint capital, but the states formerly met at Presburg. Transylvania, on the east of Hungary, with two millions of inhabitants, and Croatia, Slavonia, and Dalmatia, on the south, containing about one million and a half of people, are also subject to Austria.

206. Galicia forms an extensive plain in the south of Poland, which Austria has wrested from that country by successive partitions. It is generally fruitful in grain, but rudely cultivated; and all the branches of industry are in a depressed state. The salt mines of Wieliczka, however, are the largest in the world, containing long ranges of apartments, and forming a sort of subterranean city. Lemberg is a large old capital, with 70,000 people, of whom about 20,000 are Jews.

207. Venetia, or Austrian Italy, will be described in the account of that country. Lombardy, which formerly belonged to Austria, now forms part of the Sardinian monarchy.

Extent, 255,600 square miles. *Population* (excluding Lombardy), 35,000,000 souls.

PRUSSIA, AND THE OTHER GERMAN KINGDOMS, &c.

208. Prussia is a large kingdom, extending over various parts of Poland and Germany. In 1741 it consisted only of Brandenburg and of Royal and Ducal Prussia. Frederick the Great, an able and ambitious prince, then wrested

Silesia from Austria, and afterwards, by the partition of Poland, acquired a large portion of that country. Prussia has an extensive coast upon the Baltic Sea, and is traversed by very fine rivers—the Rhine, Weser, Elbe, Oder, and Vistula. By these channels she carries on a great trade, exporting from the eastern provinces grain and timber; from the middle, very fine wool; and from those on the Rhine, the valuable wine grown on its banks. By the war which Prussia commenced against France in 1806, she at first lost half her territory, but after the triumph of the combined armies in 1814 she regained nearly all she had lost, with the addition of fresh possessions in Saxony, Westphalia, and the Grand Duchy of the Rhine. The kingdom now consists of the following parts:—

(1.) *East and West Prussia.* This territory, from which the electors of Brandenburg assumed the title of king, consists of an extensive plain along the Baltic. Great part is covered with wood, but the rest tolerably cultivated. The Vistula, flowing into West Prussia, brings with it most of the trade of Poland. Dantzic, at its mouth, is one of the greatest commercial cities in Europe, and the chief seat of the corn trade. Königsberg, on the Pregel, capital of East Prussia, is a large and handsome city, with a university. *Extent*, 26,000 square miles. *Population*, 2,867,000.

(2.) *Posen* is an extensive province, obtained in the partition of Poland. It is level, well watered, but ill-cultivated, the chief produce being cattle and sheep. Posen is the capital, rather handsome. *Extent* 11,800 square miles. *Population*, 1,490,000.

(3.) *Brandenburg*, the original possession of the Prussian sovereigns, called then its electors, is a large flat plain, in many parts sandy and unproductive. Though by no means the finest part of the monarchy, it contains Berlin, the capital, which late monarchs have rendered one of the finest cities in Europe. The palace, the Brandenburg gate, and the street called the Lindenstrasse, excite general admiration. There is also a considerable trade, with some flourishing manufactures; the population, 547,000.

Potsdam, the favourite residence of Frederic the Great, is only a large military post. *Extent*, 15,480 square miles. *Population*, 2,467,000.

(4.) *Pomerania*, a long flat sandy province on the shore of the Baltic. Though well cultivated, it is not very fruitful; but the Oder conveys to its ports the produce of Silesia and Brandenburg. Stettin is the principal city, with a population of 64,000. Stralsund is a strong and very celebrated fortress. *Extent*, 12,000 square miles. *Population*, 1,389,000.

(5.) *Silesia*, conquered from Austria nearly a century ago, is the most fertile of the provinces; finely diversified with mountains and plains. Its linen manufactures are famous. Breslau, the capital, is large and commercial, with 146,000 people: and there are other thriving towns. *Extent*, 16,300 square miles. *Population*, 3,390,000.

(6.) *Prussian Saxony*, to the west of Brandenburg, is composed of a number of detached territories, acquired by conquest and otherwise. They compose generally an extensive plain, watered by the Elbe, and mostly very fruitful. The sheep yield very fine wool. Magdeburg, the capital, with 68,000 inhabitants, is a very strong fortress, famous in history. *Extent*, 10,076 square miles. *Population*, 1,976,000.

(7.) *Prussian Westphalia* is composed of various portions of the great German circle of that name. It is somewhat rough and hilly, watered by the rivers Weser and Lippe. Westphalia hams are in great repute. Munster, once the residence of a sovereign bishop, has 27,000 inhabitants. *Extent*, 8,270 square miles. *Population*, 1,618,000.

(8.) The *Rhenish provinces* consist of two parts; one composed of the united territories of Juliers, Cleves, and Berg; the other called the Lower Rhine. The country watered by the Rhine and the Moselle is mountainous, and finely variegated, presenting the most beautiful

esteemed. Cologne, with 120,000 inhabitants, is an ancient and noble city, and its cathedral one of the grandest Gothic edifices in Europe. It is the centre of the steam navigation on the Rhine. Aix-la-Chapelle, capital of the empire of Charlemagne, is still greatly frequented on account of its mineral waters. Treves is very ancient, abounding in Roman antiquities. Elberfeld is usually called the Manchester of Germany, from the extent of its manufacturing industry. Düsseldorf is a beautiful city, famous for its picture-gallery, and school of art.

Extent, 10,710 square miles. *Population*, 3,215,000.

209. The king of Prussia has a revenue of 20,000,000*l.* sterling, an army of 200,000 men, and a militia of equal amount. Down to 1848, his prerogative was nearly absolute; but since that period a constitution of the most limited character has been introduced. Ample provision has been made for the instruction of the people, every child having the means, and being under the obligation, to acquire the elements of education. Prussia has induced the neighbouring states to enter into a commercial union, which comprises Hanover, Bavaria, Würtemberg, Saxony, Hesse-Cassel, Hesse-Darmstadt, Baden, Nassau, Frankfort, &c. These states allow a free exchange of goods between each other, but impose duties on those from the other German states.

210. Bavaria, next to Austria and Prussia, is the most important state. It was raised from an electorate into a kingdom by Napoleon in 1805, and received great additions to its territory in 1815. It is bounded by the Austrian States, Würtemberg, and Saxony, contains above four millions of inhabitants, and enjoys a representative constitution.

211. Munich, the capital, with 148,000 inhabitants, and the seat of a university, has been embellished, during the last and the present reigns, with several public buildings of great beauty and magnificence; and, under the patronage of the reigning sovereign, its already splendid collections of works of ancient and modern art bid fair to give it in

kingdom also includes the cities of Nuremberg, formerly famous for arts, manufactures, and inland trade, still populous, and well built, Ratisbon (*Regensburg*), Augsburg, Würzburg, and Erlangen: the two latter are seats of universities.

212. The electorate of *Saxony* was created a kingdom by Napoleon, after his conquest of Prussia. He annexed to it also the duchy of Warsaw in Poland, but after his defeat in 1814, Saxony was stripped of that, and of several of its German territories. It contains now only 2,225,000 inhabitants, who are industrious and enlightened.

213. Dresden, the capital of Saxony, with 128,000 inhabitants, is beautifully situated on the banks of the Elbe; it is one of the finest and best-built cities in Europe, and has splendid collections of paintings, statues, and other works of art. The porcelain known as *Dresden china* is manufactured at the town of Meissen, on the left bank of the Elbe, below Dresden. Leipsic, with 78,000 inhabitants, is a flourishing commercial town, and is celebrated for its annual fairs, at which a great trade in books is carried on. Freiberg, situated to the south-west of Dresden, is the centre of an important mining district, and contains an academy of mines.

214. *Württemberg* is another of Napoleon's kingdoms, and the smallest in Germany. Its capital is Stutgard, and it contains also the ancient city of Ulm, and Tübingen, with a university. It enjoys a representative constitution. Population, 1,721,000.

215. *Hanover* has also been changed from an electorate into a kingdom. It is mostly a level plain, somewhat heathy and barren, but having on the south-east border a remarkable mountain chain called the Hartz. In 1714, George, the elector, became king of Great Britain, and the two countries remained attached till the accession of Queen Victoria, when, as Hanover could not be governed by a female, her uncle, Ernest Augustus, Duke of Cumberland, succeeded to the throne, at present occupied by his son Prince George. The population is 1,888,000. Hanover, an ancient city, with 70,000 inhabitants, is the capital. Embden and Stade, on the Elbe, are the chief ports. Göttingen is the seat of one of the most renowned universities

is the centre of the mining district. Osnabrück gave the title of bishop to the late Duke of York.

216. Germany contains many *smaller states* of some importance. Of these the chief are, *Baden*, on the borders of Switzerland, comprising the mountainous territory called the Black Forest, and including, besides Carlsruhe the capital, the beautiful city of Mannheim, Heidelberg, with an university and noble castle, and Baden-Baden, much frequented for its hot baths, in a most picturesque country. It is governed by a Grand Duke, and has a representative constitution. Population, 1,369,000. — *Hesse-Cassel*, a well cultivated, though hilly and woody territory in the north, with a population of 738,000. It is governed by an Elector (the only one of the German sovereigns who has retained this title), and has a representative constitution. Cassel, on the Fulda, with 40,000 inhabitants, is an elegant city, with valuable collections in literature and art. — *Hesse-Darmstadt*, fertile and finely wooded, containing 856,000 inhabitants, is a territory on the Rhine, governed by a Grand Duke, and includes the fine ancient city of Mentz, or Mayence. — *Brunswick*, famous for the bravery of its dukes, from whose house the British royal family is descended. Its capital of the same name has a splendid palace, and its opera is one of the best in Germany. — *Weimar*, whose chief city of the same name was formerly considered the literary capital of Germany, from being the residence of Goëthe, Schiller, Wieland, Herder, and other eminent poets and philosophers. At Jena there is a celebrated university. — *Nassau*, west of the Rhine, is a most picturesque country; its baths at Wisbaden, Schlangenbad, Ems, Schwalbach, &c., attract numerous visitors. — *Mecklenburg-Schwerin*, and *Mecklenburg-Strelitz*; the last of which, though small, has given two queens to England. *Oldenburg* also deserves notice, from its high family alliances, particularly with Russia. *Saxe-Coburg Gotha* is in this respect still more distinguished, by the connection of its princes with Great Britain, Prussia, France, and Russia. — *Prussia*, the largest of the

Albert is the second son of the late duke of this principality. There is a great number of very small principalities, which are found enumerated in the list of the German Confederation.

217. The free cities of Germany, formerly very numerous and flourishing, are now reduced to four; namely, Hamburg, Frankfort, Lubeck, and Bremen. Hamburg, at the mouth of the Elbe, with 230,000 inhabitants, and the greatest commercial city of Germany. It was devastated, in 1842, by a conflagration, to which the great fire in London affords almost the only parallel in modern times, but has since been rebuilt on a much greater scale of grandeur and convenience than before. Frankfort, on the Mayn, with 83,000 inhabitants, a great seat of inland trade, and the place where the Diet assembles. Lubeck, once the head of a great maritime confederacy, called the Hanse Towns, but now having only some trade with countries on the Baltic. Bremen, a flourishing sea-port at the mouth of the Weser, with about 88,000 inhabitants.

SPAIN.

218. Spain is remarkable for its fine climate, soil, and commanding geographical and commercial situation. The coast line is of great extent. The interior is traversed by long and lofty ranges of mountains, which run generally in distinct and parallel lines, from east to west, the principal of which are the Cantabrian, Castilian, Sierra de Toledo, Sierra Morena, Sierra Nevada, and the Celtiberian mountains. Between these ridges there are extended plains. On the south there are plains which descend almost to the level of the Mediterranean; they display great luxuriance of vegetation, and abound in all the choicest fruits of a southern climate. The Pyrenees separate France from Spain.

219. Spain has (since 1833) been divided into 49 provinces, containing upwards of 15,000,000 of inhabitants. The southern provinces are among the most fertile tracts

sion and superstition, become comparatively poor. Efforts have of late been made to improve it; but they have been much obstructed by civil war and dissension. Its surplus products consist of very fine wool, wine, silk, and barilla.

220. Its chief towns are, Madrid, the capital, containing a population of about 475,000. It stands on an elevated plain. The palaces and other public buildings are splendid, and adorned with very fine paintings; but the city has on the whole a gloomy aspect. The convents amounted formerly to 66; but many of them have been suppressed. The Prado is a spacious promenade, on which the great display their elegant equipages. Seville ranks next, and though it has much declined, contains a magnificent cathedral and other edifices. Cadiz is the chief seat of trade, exporting goods valued at above a million. Malaga, Alicant, Valencia, and Barcelona are large commercial cities on the shores of the Mediterranean. Granada and Cordova contain most splendid monuments, erected by Moorish princes, who formerly reigned there. Saragossa is distinguished for the bravery its inhabitants displayed in two sieges by the French. Salamanca has a celebrated university.

221. The principal rivers are, the Tagus, the Douro, the Ebro, the Guadalquivir, and the Guadiana.

Obs. The decline of Spain has been dated from the time when the discovery of America by Columbus gave it the possession of immense territories, abounding in gold and silver. These vast countries have now declared themselves independent, and are for ever lost to Spain, which at present retains only the islands of Cuba and Porto Rico.

222. Gibraltar, on a rock at the entrance of the Mediterranean, was captured in 1704 by the English, who have rendered it nearly impregnable; and it serves as an entrepôt of Mediterranean trade, and a naval station in time of war.

223. Majorca, Minorca, Ivica, and Formentera, called the Balearic Islands, are situated in the Mediterranean Sea.

PORTUGAL.

224. Portugal forms the most western part of the Spanish peninsula, and is bounded on the east by Spain and on the west by the Atlantic. It is mountainous, and is watered by the Tagus, the Douro, and the Mondego. There are no natural features by which this country can be distinguished from Spain—the mountains are the prolongations of those of Spain, and the rivers are the wide terminations of the Spanish streams in their progress to the ocean. The general aspect is said to be very luxuriant, in many parts presenting picturesque and fertile valleys. It is divided into six provinces.

225. Portugal was once a powerful state, especially by sea; but tyranny and the indolence and superstition of the inhabitants have greatly reduced its importance. The population is about three millions and a half; and the great majority are Roman Catholics. Wine and salt are the chief exports.

226. The chief towns are, Lisbon, the capital, finely situated on the Tagus; and Oporto, at the mouth of the Douro, whence port wine is exported to the extent of 30,000 or 40,000 pipes. Lisbon suffered severely by an earthquake in 1755. Coimbra, in which is the only Portuguese university, stands on the river Mondego. The commerce of Portugal was at one period most extensive, but is now inconsiderable; it is carried on chiefly with Great Britain and the Portuguese colonies, of which there are Goa, Diu, and Macao in the East Indies; and Madeira, a fine island in the Atlantic, possessing a most salubrious climate, and producing in great abundance an excellent wine, which bears its name. In the Atlantic, about a thousand miles from the coast of Europe, are the Azores, or Western Islands, also belonging to Portugal: they are subject to storms and sometimes to earthquakes; the soil is fertile, and the climate temperate. Off the north-west coast of Africa lie the Cape Verde Islands, the soil of which is barren, and the climate hot and unwholesome.

227. The immense region of Brazil, in South America, once belonged to Portugal, but it is now an independent state under the title of empire.

HOLLAND.

228. The kingdom of Holland consists of a territory which is in general an unvaried level; though flat, the aspect is agreeable. A great part of the surface is beneath the level of the sea, but the Dutch have with immense labour constructed dykes, which exclude the waters, and convert the space originally taken from the sea into fertile fields. The principal rivers of Holland are the Rhine and the Maese or Meuse. The canals are very numerous, connecting almost every village, and serving for travelling and the conveyance of goods.

229. During the reign of Philip II. Holland threw off the yoke of Spain, and became a flourishing republic under the title of the Seven United Provinces. The country, however, being overrun, in 1795, by the French revolutionary armies, was formed, first, into the Batavian Republic, and then into the kingdom of Holland under Louis, brother of Napoleon. On the triumph of the allied armies in 1814, Holland was united with the Belgic provinces to form the kingdom of the Netherlands. In 1830, however, Belgium revolted, and established itself into a separate kingdom; and Holland thus retains little more than the original territory of the United Provinces.

230. It now consists of the following provinces, which, with their population and capital cities, are here given from accounts in 1861:—

Provinces.	Population.	Cities.	Population.
Holland, North -	- 534,000	Amsterdam -	- 248,000
———, South -	- 635,000	Rotterdam -	- 109,000
Zealand -	- 170,000	Middleburg -	- 16,000.
Utrecht -	- 163,000	Utrecht -	- 54,000
North Brabant -	- 412,000	Breda -	- 15,000
Guelders -	- 410,000	Nimeguen -	- 21,000
Friesland with Drenthe }	- 378,000	Leuwarden -	- 25,000

Overijssel -	-	240,000	Deventer -	-	14,000
Groningen -	-	211,000	Groningen -	-	36,000
Limburg (part) -	-	219,000	Maestricht -	-	28,000
Luxemburg (part) -	-	197,000	Luxemburg -	-	16,000
		<hr/>			
		3,569,000			
		<hr/>			

231. Amsterdam, once a collection of fishermen's huts, offers to the traveller an interesting proof of what the industry and perseverance of man can accomplish. Its largest streets, of which there are three, forming semi-circles towards the land, called Graats, have broad canals running through them, with rows of trees on each side, and a good coach-road. This mode of arranging the streets is common in other parts of Holland, and offers a great facility to its commerce. The chief edifices are, the stadt-house, founded on piles at an immense expense, the exchange, and the post-office.

Obs. The Hague, in South Holland, with 80,000 inhabitants, which, from its appearance, is generally styled the largest village in the world, is the residence of the sovereign, and contains a handsome palace. Rotterdam, near the mouth of the Maese, the chief outlet of the Rhine, commands the navigation of that great-river, and is visited by numerous ships of every description. Leyden, in South Holland, is famous for its defence against the Spaniards, in 1574, when the inhabitants, opening their sluices, inundated the enemies' camp and the country round. The University was one of the first in Europe. Haarlem is noted for its bleach-fields and flower-gardens, and for its organ, long the most powerful in the world; Delft for the ware bearing its name; Gouda for cheese and tobacco-pipes.

232. The soil is too moist for grain, but affords very rich pastures, from which excellent butter and cheese are made and exported. The Dutch are the best gardeners in Europe; and particularly curious in flowers, having been known to pay 700*l.* for a single tulip. Their chief manufactures are linen, and the spirit named gin or hollands.

233. The commerce of Holland was long more extensive than that of any country in the world; but it was almost crushed by the tyranny of Napoleon, though it has since, in a great measure, revived. The Dutch carry on the

whale and herring fisheries, though not on the same great scale as formerly: but they are still sources of great wealth. The people are cleanly, frugal, and industrious: they mostly profess the Protestant religion, under the Presbyterian form, but grant full toleration to all other persuasions.

BELGIUM.

234. Belgium is a flat country, and may be regarded as a continuation of Holland. Except on the south-west frontier, the whole country is under high cultivation. It rivals Holland as to canals; and a most complete system of railways has lately been formed across it in every direction.

235. The Belgic provinces joined with the Dutch in the revolt against Philip II., but were subdued by the Prince of Parma, and afterwards united to Austria, under the title of the Netherlands, or Low Countries. After being overrun by France in 1794, and incorporated with that country, they were, in 1814, combined with Holland, to form the kingdom of the Netherlands; but by their revolt in 1830 were formed into a separate kingdom, of which Leopold, Prince of Saxe-Coburg, was chosen sovereign. Belgium is divided into the following provinces; the population of which, in 1860, with that of their capitals, is here shown.

Provinces.	Population.	Cities.	Population.
South Brabant -	801,000	Brussels -	175,000
Antwerp -	453,000	Antwerp -	112,000
Flanders, West -	639,000	Bruges -	50,000
———, East -	799,000	Ghent -	118,000
Hainault -	814,000	Mons -	20,400
Liege -	530,000	Liege -	96,000
Namur -	298,000	Namur -	22,000
Limburg (part) -	195,000	Tongres -	8,000
Luxemburg (part) -	202,000		
	4,731,000		

236. Brussels is one of the most elegant cities of Europe, both for situation and edifices. The park, the promenade called the Green Alley, and several churches, form its chief ornaments. It has valuable manufactures of lace, carpets, and other articles. Antwerp, once the chief seat of commerce in northern Europe, had greatly declined, but is now somewhat revived. Its cathedral, above 500 feet high, is the finest Gothic edifice in the world, and adorned with the best Flemish pictures. Ghent and Bruges flourished at a still earlier period, and continue to be large cities. Louvain is noted for its university. Mechlin is the centre of the great system of railroads with which the country is intersected. It is celebrated also for its lace manufactures and a fine cathedral. Liege and Namur are large manufacturing towns on the Meuse. Ostend is a thriving seaport.

237. Belgium was formerly unrivalled as a seat of commerce and manufactures, and still is so in those of lace and cambrics. Nearly the whole population is Catholic, though Protestants are tolerated.

DENMARK.

238. The kingdom of Denmark consists of the islands of Zealand, Funen, &c.; the peninsula of Jutland; the duchies of Holstein, Sleswick, and Lauenburg; and the remote islands of Iceland and Faroe, with West Greenland. The whole surface is nearly flat, particularly the islands. A remarkable feature in the aspect of the country is the number of shallow lakes or lagoons by which the peninsular of Jutland is intersected.

Obs. At the close of the war in 1815 Denmark was compelled to cede the kingdom of Norway to Sweden; but by the definitive treaty, the little province of Lauenburg in Germany, which was detached from Hanover, was given in exchange.

239. Its chief town, Copenhagen, is in the island of Zealand. The city is well built and strongly fortified; the public buildings

superb; the educational, literary, and scientific establishments rank among the first class. At the castle of Elsinore, in the strait called the Sound, foreign ships trading to the Baltic formerly paid a small toll. Altona is an important commercial city.—Kiel is a handsome, well-built, thriving, town. Its university has had many distinguished men among its professors. The trade is considerable.

240. The narrow sea situated between Zealand and Funen is called the *Great Belt*; and that between Funen and the continent is named the *Little Belt*.

241. *Iceland*, an appendage of the Danish crown, is an island in the North Atlantic Ocean, distinguished for its boiling springs, volcanoes, and other indications of subterraneous fires. Hecla, a lofty mountain, is the principal volcano. The general aspect of the country is the most desolate and dreary imaginable. The island is traversed in all directions by ranges of lofty mountains, continually covered with ice and snow, beneath which there burns a perpetual fire. The island appears to have been upheaved by volcanic agency from the bottom of the sea. The inhabitants are poor, but virtuous and intelligent. They depend for food upon the abundance of fish which the seas afford.

242. The western coast of Greenland is famous for its whale-fishery; but this is chiefly carried on by other nations: and Denmark has only a few small settlements on the coast. In the West Indies, Denmark possesses the small but well-cultivated island of St. Croix, and also the smaller islands of St. Thomas and St. John, which form part of the group of the Virgin Islands.

243. The supreme government is conducted under the king, by a privy council, and by departments or colleges, each having a minister at its head.

Extent, exclusive of Iceland and the Faroe Islands, 22,000 square miles.

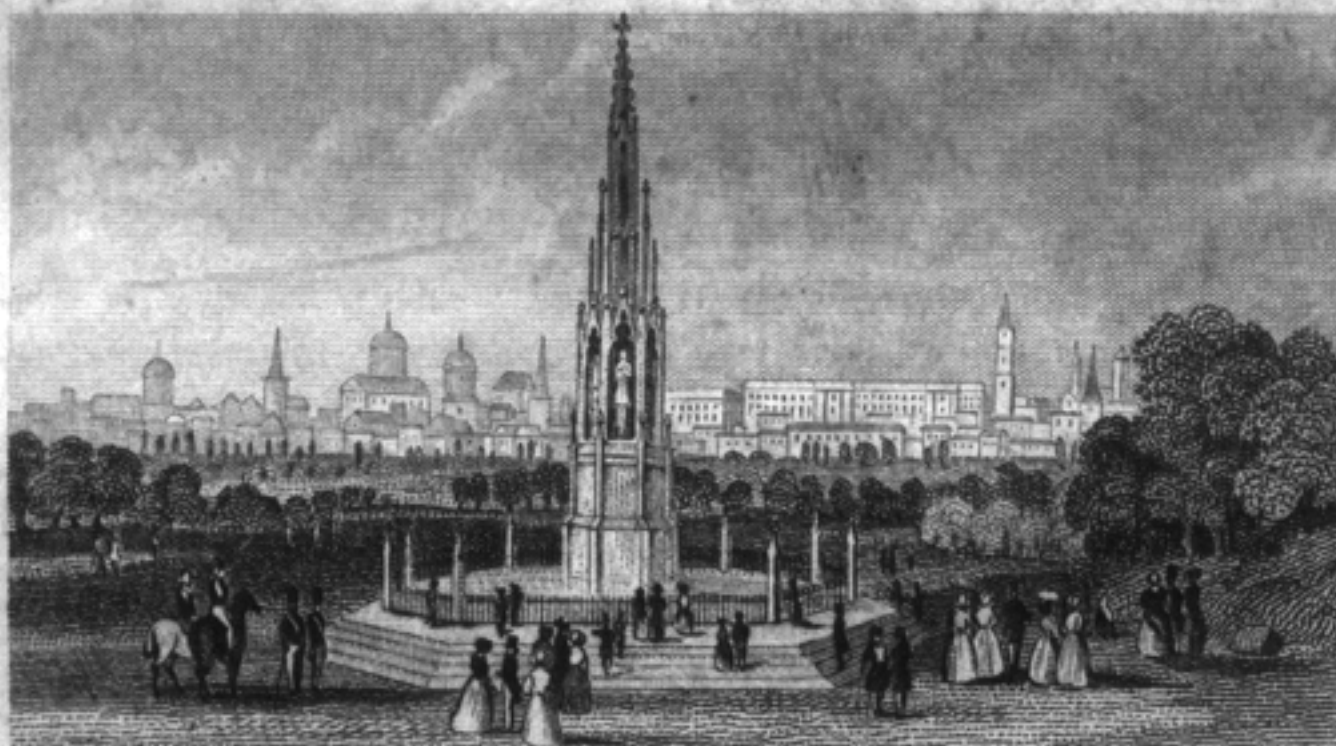
Population, in 1860, 2,600,000.



STOCKHOLM.



LAPLANDERS.



BERLIN.

SWEDEN AND NORWAY.

244. The kingdom of Sweden now includes the extensive, but cold and thinly inhabited countries, bounded by the Baltic, the Gulf of Bothnia, and the Northern Ocean. Sweden is a barren country, remarkable for the number and extent of its lakes and woods. Its rivers are numerous; but few are navigable. Towards the north, about its middle region, Sweden has only two seasons; nine months' winter, and three months' summer, during which vegetation is wonderfully rapid. Its agriculture has of late been greatly improved.

245. The Swedish islands are numerous; but those constituting the archipelago of Aland have been ceded to Russia. In the Baltic Sea there are no tides; but a current mostly sets from it into the North Sea.

246. *Lapland*, the most northern part of Europe, and of the kingdom of Sweden, contains immense forests, chiefly of fir trees, and scanty pastures, which nourish only the rein-deer.

247. The Laplanders are of diminutive size, but peaceable and industrious. The milk of the rein-deer supplies them with food; and in sledges drawn by those animals they pass with the utmost rapidity over ice and snow.

Obs. 1. In the northern parts of Lapland, as in countries under the same latitude, the sun is absent in winter about seven weeks, while in summer it never sets for the same period.

2. These phenomena are explained and illustrated in the Problems on the Globes and Maps. See a subsequent page of this work.

248. Exclusive of Norway and Lapland, Sweden is divided into Sweden Proper, Gothland, and West Bothnia. These are subdivided into numerous provinces, which include the islands of Gottland and Oeland, in the Baltic.

249. The chief towns are, Stockholm, the capital, in $59^{\circ} 20'$ of north latitude; Upsal, famous for its university; Gothenburg, a celebrated trading port; and Carlscrona, the naval port and arsenal.

Obs. Stockholm occupies seven small rocky islands, and the scenery around is truly singular and romantic. Most of the houses are of

stone, or brick, covered with white stucco; except in the suburbs, where several are of wood painted red. The royal palace stands in a central and high situation: and there are a castle, an arsenal, and several academies. The population is estimated at 112,000.

250. The chief wealth of Sweden consists in its mines of iron and copper. The copper mines are very spacious.

251. NORWAY, formerly subject to Denmark, was united to Sweden by the treaty of Kiel, in 1815. It is composed of a continuous range of mountains, whose sides slope down to the sea; and the streams and cataracts which roll down their steeps render travelling very unsafe. On the coast of Norway are innumerable small islands, occupied by birds and some few fishermen; and on the north is a dangerous vortex of the sea, called the Maelstrom.

252. The inhabitants raise scarcely any grain or vegetables, but import them in exchange for their timber and fish. In the inland and northern parts the people live on coarse fare, and in seasons of scarcity are sometimes obliged to mix bark of trees with their bread.

253. Norway contains valuable forests of fir, which forms its chief export. It has also extensive fisheries, with valuable quarries, and mines of silver and other metals; these it exchanges for corn and other necessaries.

254. The chief towns are Christiania, the seat of a university, Bergen, and Drontheim.

	Sweden	-	-	-	195,000 square miles
<i>Extent.</i>	Norway	-	-	-	145,000
<i>Population in</i>	1860.	Sweden	-		3,857,000
	1855.	Norway	-		1,433,000
				Total	5,290,000

SWITZERLAND.

255. The surface of this country may be considered an epitome of the sublime and beautiful of nature. The gigantic Alps rise boldly above the clouds; their snow-clad summits and icy pinnacles glittering amidst the region

of storms. Mont Blanc, the highest mountain in Europe, is on the immediate border of Switzerland. Within it, Monte Rosa, Schreckhorn, Jungfrau are scarcely inferior. Simplon, St. Gothard, and Pilate are smaller, but form striking objects. These splendid mountains enclose deep navigable lakes, remarkable for the purity of their waters, such as the lakes of Geneva, Lucerne, Constance, Neufchâtel, and Zurich, which are distinguished for their picturesque beauty.

256. From these mountains masses of ice, called *glaciers*, descend, and settle on the lower fields. Sometimes enormous masses of snow, called *avalanches*, rush down, and overwhelm houses, and even villages.

257. The long narrow valleys abound with cultivated fields and vineyards, whilst upon the sides of the mountains there are forests of almost every kind of trees; in short, nearly all the vegetable products of the different zones of continental Europe are found in this romantic country.

258. The chief rivers flowing through Switzerland are the Aar, the Reuss, and the Limmat; and it contains the sources of the Rhine and the Rhone, two of the largest rivers in Europe.

259. Switzerland is remarkable for the simplicity of its inhabitants, and for their love of liberty. It is divided into twenty-two cantons; which are Berne, Geneva, Basle, Zurich, Zug, Friburg, Aargau, Soleure, Schaffhausen, Gall, Appenzell, Glaris, Thurgovia, Vaud, Valais, Grisons, Ticino, Neufchâtel, Schweitz, Lucerne, Uri, and Unterwalden. The last four are called the Forest Cantons.

260. The principal towns are Berne, Basle, Zurich, Lucerne, Friburg, Geneva, Lausanne, and Neufchâtel. Most of these are beautifully situated. The last-named town formerly belonged to Prussia.

261. The country is too rugged to produce much grain; but it has rich pastures, and exports cattle and cheese. There are considerable manufactures of cotton, linen, and watches.

262. The Swiss cantons are united in a confederacy for mutual defence, regulated by an annual diet, presided over by a *landamann*. The military contingent is 33,000 men.

Extent, 18,670 square miles. *Population*, 2,510,000.

ITALY.

263. The surface of this vast peninsula is more finely diversified than that of perhaps any other country upon the globe. On the north it is bounded by the lofty Alpine chain. Through it run the Apennines, the southern extremity of which assumes a volcanic character. Vesuvius is a celebrated volcano near Naples, whose eruptions have buried whole cities, as Herculaneum and Pompeii, which have been dug into, and found almost entire. Etna, in Sicily, is a still higher volcano, which has emitted ashes to the distance of eighty miles.

264. The rivers are numerous, but few of them are of any considerable size: the principal are the Po and the Adige, both of which flow through the plain of Lombardy, in the north of the peninsula, and enter the Adriatic Sea; the Arno, which passes Florence; and the Tiber, upon which Rome stands. The two last-named belong to the western side of Italy, and flow into the Mediterranean. The principal lakes are the Lago Maggiore, and those of Como and Garda, at the foot of the Alps; with those of Perugia and Fucino (or Celano), amongst the Apennines. The capes are, Spartivento, Di Leuca, and Otranto. The gulfs and bays are, the Adriatic (which from its size is called a sea, and the northern portion of which forms the Gulf of Venice), the Gulf of Taranto, the Bay of Naples, and the Gulf of Genoa.

265. The islands belonging to Italy include Corsica, Sardinia, and Sicily, together with the Lipari group, Malta, Elba, and a few others. The three first-named are of large size. Corsica belongs to France, and Malta

one of the finest portions of Europe, has a mountainous surface, and includes tracts of luxurious fertility. Wines, fruits, sulphur, and shumac, are exported from it.

266. Italy was divided, until a recent date, into several distinct sovereignties, the chief of which were — the Kingdom of Sardinia, the Lombardo-Venetian Kingdom, the Kingdom of Naples and Sicily, the Papal Dominions (or States of the Church), the Grand-duchy of Tuscany, and the Duchies of Parma and Modena. The Lombardo-Venetian territory formed part of the Austrian empire; in 1859, however, Lombardy was transferred from Austria to the Sardinian monarchy, by the peace of Villafranca, and only the Venetian territory now remains under Austrian rule. Savoy and Nice, which had hitherto belonged to the Sardinian crown, were transferred to France. Since that date, the various Italian sovereignties (with the exception of a portion of the Papal territory) have become united to the Sardinian monarchy, and the whole consolidated into the Kingdom of Italy. The Roman and Venetian territory are now alone wanting to the full completion of Italian unity, in a political sense.

267. The Kingdom of Italy, as at present constituted, comprehends upwards of 90,000 square miles, with a population little short of 22,000,000. Its constituent portions are —

Provinces.	Chief Towns.
Piedmont, Genoa, and adjacent territories, forming part of the former Sardinian kingdom	Turin, Genoa, Alessandria.
Island of Sardinia - - -	Cagliari, Sassari.
Lombardy - - -	Milan, Brescia, Pavia.
Emilia - - -	Bologna, Ferrara, Parma, Modena.
The Marches - - -	Ancona.
Umbria - - -	Perugia.
Tuscany - - -	Florence, Pisa, Lucca.
Naples - - -	Naples, Capua, Gaeta.
Sicily - - -	Messina, Palermo, Catania.

268. *Piedmont* and the *Genoese territory* form the north-western portion of the Italian mainland. The former (as the name implies) lies at the foot of the Alps,

and includes the upper part of the fertile valley watered by the river Po. Turin is the chief city of Piedmont, and the present capital of the kingdom of Italy. It stands on the left bank of the Po, and has 180,000 inhabitants. Genoa, at the head of the gulf to which its name is given, is one of the chief seaports of the Mediterranean, and has 120,000 inhabitants. Milan, in *Lombardy*, is conspicuous for its cathedral, built of white marble.

269. The provinces known as *Emilia* comprehend the Bolognese territory (formerly the northern part of the States of the Church), with the former Duchies of Parma and Modena. The cities of Bologna and Ferrara have a distinguished place in history: the former has 75,000 inhabitants. Parma has a population of 45,000; Modena, of 32,000. Ancona is a flourishing seaport, on the Adriatic, with 29,000 inhabitants.

270. *Tuscany*, a beautiful and fertile portion of Italy, lies on the west side of the peninsula, and includes the valley of the Arno. Florence, its chief city, lies on the banks of that river, and Pisa is on the same stream, nearer its mouth.

271. The *Neapolitan provinces* embrace the most southwardly portion of the Italian peninsula. Naples, the chief city of this region (and the largest city of Italy), is distinguished by the beauty of its situation, and has upwards of 400,000 inhabitants. Palermo, the largest city of Sicily, has 186,000 inhabitants; Messina, which stands beside the Straits that divide Sicily from the mainland, has 94,000.

272. The *States of the Church*, or *Papal Dominions*, formerly stretched across the entire breadth of Italy, from sea to sea. They are now, however, reduced to a fourth part of their previous dimensions, comprehending no more than 4500 square miles, with fewer than 700,000 inhabitants. Within this tract is included Rome, long the centre of the civilised world, and still conspicuous

of the Tiber, about 16 miles above its mouth, and has a population of 184,000.

273. *Austrian Italy*, or *Venetia*, is the north-eastern portion of Italy. It is enclosed on three sides by the Alps, the Adriatic, and the river Po. Venice, its chief city, is situated in the midst of lagoons, upon a cluster of islands which adjoin the waters of the Adriatic. Though declined from the importance which it possessed at a former period, when it was the capital of a sovereign republic, Venice has upwards of 100,000 inhabitants. Verona, Padua, and Mantua, are among the other principal towns in Austrian Italy.

274. *San Marino*, a republic of Italy, is the smallest as well as the most ancient state in Europe. Its government is vested in a senate of sixty members elected for life. In 1796, Napoleon offered to increase the territory of the republic, but this was wisely declined.

275. The small but important island of *Malta*, belonging to Great Britain, lies about sixty miles south of Sicily, and is celebrated for its fine port, and for the strength of its fortifications. *Elba*, off the coast of Tuscany, was the retreat of the Emperor Napoleon, when he abdicated the throne of France in 1814.

TURKEY IN EUROPE.

276. Several mountain ranges spread over the surface of this country, dividing it into rich fertile plains. The chief mountains are, Hæmus, or the Balkan, a long lofty range, which forms a barrier against Russia; Pindus and Olympus, in Thessaly; Mount Athos, celebrated in classic history, now inhabited by a number of monks and hermits.

277. The Turkish islands were very numerous; but most of them are annexed to the new state of Greece, and the only important one which Turkey retains is Candia, a fertile island, anciently celebrated and powerful under

278. But a small portion of the Turkish empire is embraced in European Turkey. It is a fine and fertile region, anciently very flourishing; but, owing to the Mahometan religion, to the despotism of the government, and to the ignorant policy of the Turks, now declining and miserable.

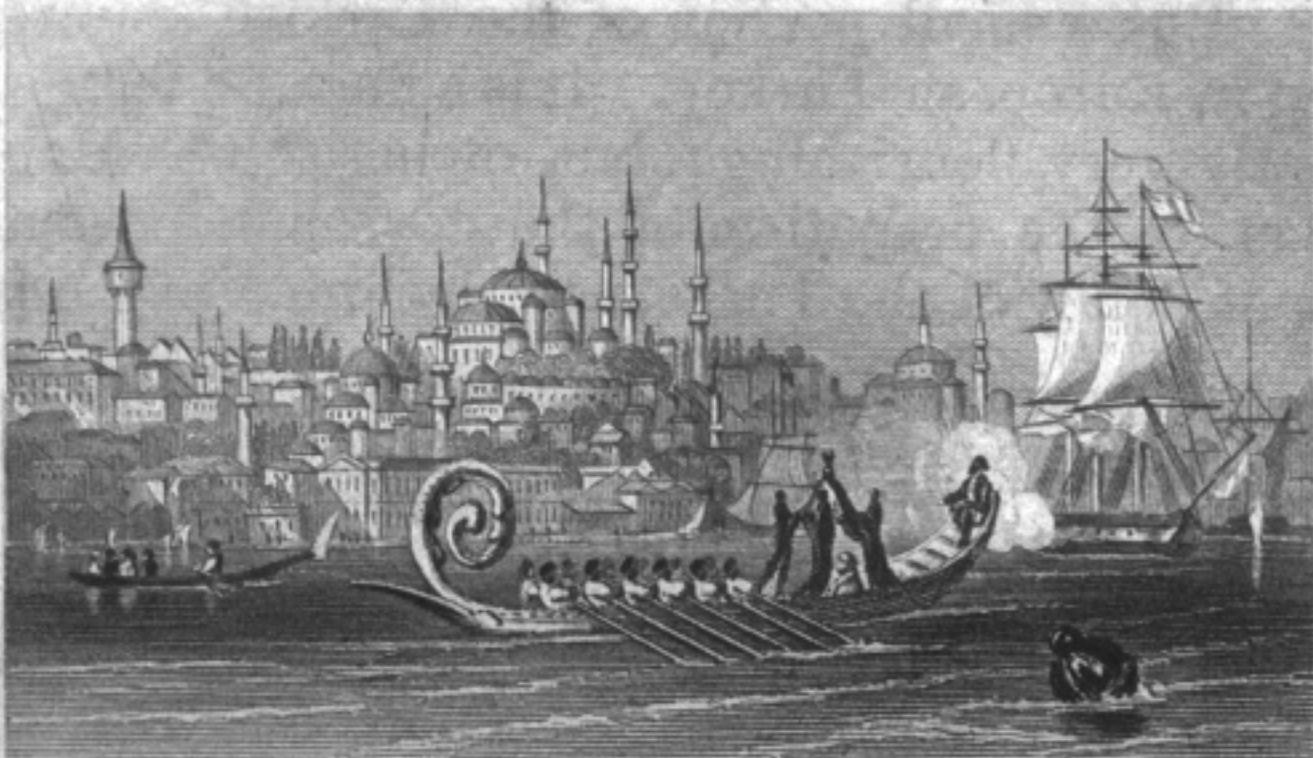
Obs. The government is despotic under the grand Signior. The provinces are governed by pachas, many of whom are nearly independent of their imperial master, and use their power to rob and oppress the inhabitants.

279. The principal provinces are Bulgaria, Rumelia, which includes the ancient Macedonia and Thessaly, and the extensive territories which constitute Albania. The principalities of Moldavia, Wallachia, Bosnia, and Servia, along the Danube, were formerly governed by princes appointed by the Porte, to whom they paid tribute; but they are now mostly either independent, or under the power of Russia.

280. The metropolis of Turkey is Constantinople, finely situated in 41° north latitude, between the Sea of Marmora and the Black Sea, the third city in Europe in point of magnitude, and one of the most important in the world.

Obs. The beauty of the situation of Constantinople can hardly be exceeded, the aspect from the sea being peculiarly grand; but on a nearer approach, the wooden hovels and narrow streets disappoint the splendid expectations of the stranger. It forms an unequal triangle, resembling a harp, being about twelve or fourteen English miles in circumference, enclosed by walls, and on two sides by the sea and the harbour called the Golden Horn. The inhabitants are computed at 550,000, including the four suburbs. Of these 300,000 are Turks, 150,000 Greeks, and the remainder Jews, Armenians, and Franks. The most celebrated edifices are the Seraglio, and the mosque of St. Sophia. The principal entrance of the Seraglio is styled Capi, or the Porte, which gives name to its court and government.

281. Adrianople is the second city in European Turkey. Salonica has a great commerce. Schumla, Silistria, Nicopolis, and Belgrade are strong frontier fortresses. The chief river in European Turkey is the Danube.



CONSTANTINOPLE.



SLAVE MARKET.



ROME.

GREECE.

282. This celebrated country no longer possesses the extent of surface it held in the days of her prosperity and magnificence; her territory has been diminished, and her monuments of classic ages obliterated by the torrent of Ottoman conquest.

283. Greece was respected by the Romans, its first conquerors; but the Turks, who held it for three centuries, reduced it to a state of cruel bondage. In the earlier half of the present century, however, the Greeks made a brave stand for their independence; and being supported by the great Christian powers, they compelled Turkey to withdraw her claims, and their country was formed into a small constitutional kingdom, in 1829.

284. The Kingdom of Greece comprehends the Morea (the ancient Peloponnesus), with the territory of the ancient Attica and Thebes, as far North as the Gulfs of Arta and Volo, together with the islands of Negropont, Hydra, and the Cyclades. The surface of the whole country is mountainous, and contains but few plains. The population does not much exceed 1,000,000. Otho, a Bavarian prince, was elected king, but by a revolution of recent date (1862), the Bavarian dynasty has been expelled, and a Danish Prince has since been placed on the throne, under the title of George I.

285. Athens, the modern, as it was the ancient, capital, was almost ruined during the war of independence, but it is in a great degree restored, and contains about 42,000 inhabitants. It is adorned by ruins of the Parthenon, the Temple of Jupiter, and other edifices erected during the golden age of Greece, and considered the finest in the world. Thebes, Corinth, and Sparta are now little more than villages. The chief modern towns are Tripolitza, Napoli di Romania, Navarino, Patras, and Missolonghi.

286. On the west of Greece lies the republic of the *Seven*, or the *Ionian Islands*, which, by recent arrangements, consequent on the revolution above adverted to, it

of Corfu, Santa Maura, Cephalonia, Ithaca, Zante, Cerigo, and Paxo, having an independent government, but under the military protection of Great Britain. These islands are rugged, but very fertile, abounding in fruit, especially currants, for which Zante is famous.

ANDORRE.

287. This little republic occupies three mountain valleys, the wildest and most beautiful of the Pyrenean chain; it is well watered by numerous small rivers. Only a portion of the land is fit for cultivation; there are some excellent pasture lands sheltered by forests of fir.

COMMERCIAL MARITIME CITIES AND TOWNS.

288. Archangel, on the White Sea.
Petersburg, on the river Neva.
Revel, on the Gulf of Finland.
Riga, on the Gulf of Riga.
Memel, on the Baltic Sea.
Königsberg, on the Gulf of Dantzic.
Dantzic, on the Vistula.
Rostock, on the Baltic Sea.
Copenhagen, on the Island of Zealand.
Stockholm, on Lake Mälär.
Gottenburg, on the Gotha.
Christiania, on Christiania Bay.
Bergen, on the North Sea.
London, on the Thames.
Liverpool, on the Mersey.
Bristol, on the river Avon.
Hull, on the Humber.
Newcastle, on the Tyne.
Glasgow, on the Clyde.
Greenock, on the Clyde.

Dundee, on the Firth of Tay.
Montrose, on the Esk.
Dublin, on the Liffey.
Belfast, on Carrickfergus Bay.
Cork, on the Lee.
Limerick, on the Shannon.
Hamburg, on the Elbe.
Bremen, on the Weser.
Amsterdam, on the Amstel.
Rotterdam, on the Meuse.
Ostend, on the North Sea.
Havre de Grace, at the mouth of the Seine.
Nantes, on the Loire.
Bordeaux, on the Garonne.
St. Sebastian, on the northern coast of Spain.
Ferrol, on the north-west of Spain.
Oporto, on the river Douro.
Lisbon, on the river Tagus.
Cadiz, on the south coast of Spain.
Malaga, on the south coast of Spain.
Alicant, on the south coast of Spain.
Barcelona, on the south-east of Spain.
Marseilles, on the Gulf of Lyons.
Genoa, on the Gulf of Genoa.
Leghorn, near the river Arno.
Naples, on Naples Bay.
Palermo, on the north of Sicily.
Messina, on the Straits of Messina.
Cagliari, on the south of the Island of Sardinia.
Venice, on the Gulf of Venice.
Trieste, on the Gulf of Trieste.
Salonica, on the Gulf of Salonica.
Galacz or Galatz, on the river Danube.
Odessa, on the Gulf of Odessa.

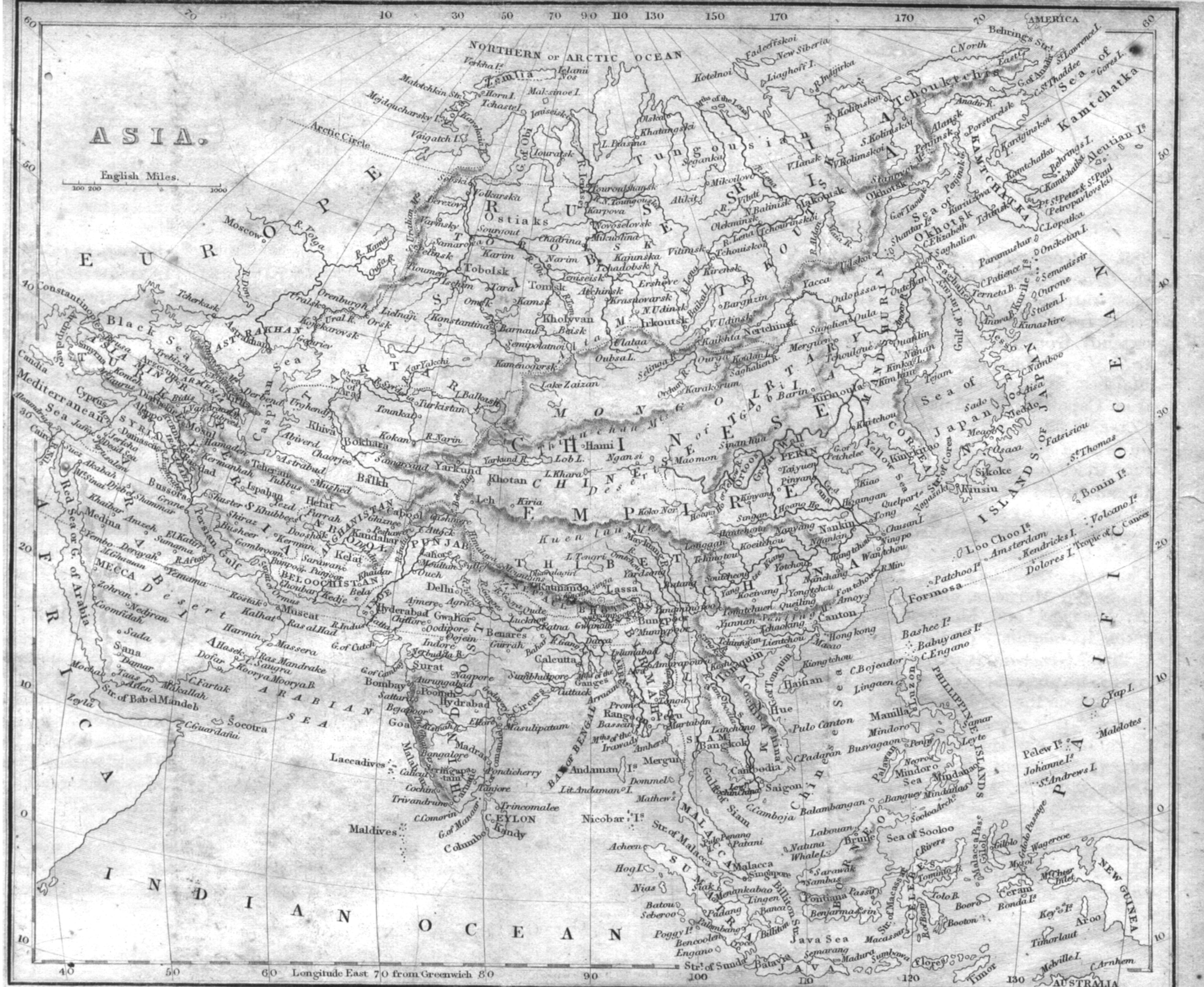
ASIA.

GENERAL DESCRIPTION.

PHYSICAL GEOGRAPHY.

289. *Astronomical position, Extent, Boundaries.*—ASIA, the largest, most early civilised, and in many respects the most interesting of the great divisions of the globe, extends from $1^{\circ} 20'$ to 78° N. lat. From west to east it extends from 26° to 190° E. long. Its greatest length, from Cape Taimura, in Siberia, to Cape Romania, in Malacca, is about 5,300 miles, and its greatest breadth, from Cape Baba, in Asia-Minor, to the east coast of the Corea, is 5,600 miles. Its surface is supposed to cover an area of about $17\frac{1}{2}$ millions of square miles, being about four times the size of Europe. It is washed by the Arctic Ocean on the north, by the Pacific Ocean on the east, and on the south by the Indian Ocean and its branches. On the west it is separated from Europe by the Ural Mountains, the river Ural, the Caspian Sea, the range of the Caucasus, the Black Sea, the Straits of the Bosphorus, the Sea of Marmora, channel of the Dardanelles, Grecian Archipelago, and Mediterranean Sea. The Red Sea forms its boundary on the side of Africa.

290. *General Aspect.*—The surface of this immense continent presents every variety of aspect. From west to east—from the Mediterranean to the shores of the Pacific Ocean—it is crossed by a ridge of highlands at various elevations, but constituting, in their central mass, the loftiest mountain system on the surface of the globe. Every thing in Asia is on a vast scale: its mountains, table-lands, and plains are unequalled in the world. The mountain-chains known under the names of the Taurus, the Caucasus, the highlands of Persia and Af-



•regions, differing widely in climate and productions. The central is the highland region. The northern region consists of an extensive plain, which stretches from the base of the central mountain mass to the shores of the Frozen Ocean. Its surface is swept by the piercing blasts of the north, and is intersected by numerous large rivers, which find their way to the Arctic Ocean. The southern region stretches along the shores of the Indian Ocean, and is exposed to the heat of a tropical sun.

291. *Seas, Bays, Gulfs.*—In the Arctic Ocean, the Gulf of Yenisei and Gulf of Obi; in the Pacific Ocean, the Chinese Sea, Gulf of Siam, Gulf of Tonquin, Yellow Sea, Sea of Japan, Sea of Okhotsk, Gulf of Anadir; in the Indian Ocean, Gulf of Martaban, Bay of Bengal, Arabian Sea, Persian Gulf, Gulf of Omaun, and the Red Sea.

292. *Straits and Channels.*—Behring Strait, on the north-eastern extremity of Asia, separating it from America; the Strait of Formosa, along the west of the island of the same name; the channel of Formosa, at the south; the Strait of Malacca, between Malacca and Sumatra; and the Straits of Babelmandeb, which connect the Red Sea with the Gulf of Aden.

293. *Capes.*—Severo Vostochni, the most northern, and Cape Romania, the most southern, point of Asia; East Cape and C. Lopatka, on the east side; Comorin and Al-Had, on the south; and C. Baba, the most western point.

294. *Peninsulas.*—Kamtschatka and Corea protrude into the Pacific Ocean; and Malacca, Hindoostan, and Arabia, into the Indian Ocean.

295. *Isthmuses.*—The isthmus of Krah joins Malacca to the mainland, and the isthmus of Suez connects Africa with Asia.

296. *Islands.*—The Aleutian and Kurile Islands, which lie on the north-east of Asia, Saghalien, the Islands of Japan (consisting of Jesso or Matsmai, Nippon, Sikoke, and Kiusiu); Formosa and Hainan, off the coast of China; the Philippines, the Sooloo Islands, the Moluccas, Java, and Sumatra; the Sunda Islands, Borneo, Celebes;

the Island of Ceylon, separated from the peninsula of Hindoostan by the Gulf of Manaar and Palk Strait.

297. *Mountains.*—The mountain system of Asia may be said to commence at Bhering's Strait, on the north-eastern shores of Asia. They are here called the Aldan Mountains, to which follow the Yablony or Stanovoi Mountains, and to these succeeds the great table-land of Central Asia. The ridge on the eastern side of this highland is called the Khing-khan in its northern part, the Inshan in the centre, and the Yung-ling in the south. From these, two other ridges diverge, called the Pe-ling and Nan-ling mountains, and traverse China Proper, in the direction of from west to east. The plateau of Central Asia is bordered on the north by the Altai Mountains, and on the south by the Himalaya, the loftiest chain on the globe. On the surface of the plateau are supported two ranges of great elevation, namely, the Thian-shan, or Celestial Mountains, and the Kuen-lun. The western side of this great table-land is bordered by the Hindoo-Koosh Mountains; westward of these succeed the upland plains of Persia and Afghanistan, the eastern borders of which are the Suleyman and the Hala Mountains, and on the west are the mountains of Zagros. From the mountains of Zagros, several chains stretch into the highland of Armenia, and are continued by Mount Taurus, into the peninsula of Asia Minor. The lofty range of the Caucasus is connected with the mountains of Armenia. The other chains are the Vindhya and the Ghauts, which surround the plateau of the Deccan in India.

298. *Table-lands or Mountain Plains.*—The whole of Central Asia, comprising Chinese Tartary or Mongolia, and the whole of Tibet, consists of a table-land of great elevation; the southern portion, which is the highest, attains in Tibet a height of 12,000 feet above the sea-level. The central part is occupied by the great Desert of Gobi. To the west of this highland, and linked to it by the range of the Hindoo-Koosh, is the plateau of Iran, called the Western Highland of Asia. In Asia Minor there is also the plateau of Anatolia. In India the

plateau of the Deccan rises to 2,000 and 3,000 feet. The western point of the peninsula of Arabia rises in some places to a height of 3,000 and 4,000 feet.

299. *Volcanoes.*—In the peninsula of Kamtschatka there are several magnificent active volcanoes. The Kurile Islands, the Islands of Japan, the Philippine Islands, and the Sunda Islands constitute a band of isles of volcanic origin. In Central and Western Asia, particularly in the Celestial Mountains, and in the region around the Caspian Sea, detached points appear, which at one period must have been the seats of volcanic action.

300. *Plains, Valleys.*—The most extensive is the great Siberian plain, which stretches from the central highland of Asia northward, until it sinks into the moss lands or *tundra* of the Arctic Ocean. The most remarkable portions of this great level are the *Steppes*, a Russian term signifying *desert*. These are the *Steppe of South European Russia*, which surrounds the Caspian, and stretches northward to the Ural Mountains; the *Steppe of the Kirgish*, which extends east of the river Ural and around the Sea of Aral; the *Steppe of Ischim*, which reaches from the slopes of the Ural Mountains to the River Irtysh; and the *Steppe of Barabinsk*, which lies between the Irtysh and the Upper Obi.

301. Further northward and eastward the great plain is traversed by numerous rivers, around the lower courses of which extend immense frozen marshes covered for the most part with moss.

302. The Chinese plain between the rivers Hoang-ho and Yang-tse-kiang is exceedingly fertile. The plains of Hindostan comprise the plain watered by the Ganges, which is very fertile; and the plain of Sinde, watered by the Indus, and also fertile in the immediate neighbourhood of the river. The plains of Siam and Pegu (both in India-beyond-the-Ganges), and the plain of Irak-Arabi (along the lower course of the Euphrates), are all fertile tracts.

303. *Deserts.*—The most remarkable are the Great Desert of Arabia, which extends from the Persian Gulf to the Red Sea, and the vast sandy deserts of Central Asia.

eastern highland of Asia. To the west of this highland are the deserts of Afghanistan, Beloochistan, and the desert of Persia; and further westward extends the deserts of Syria and Arabia.

304. *Rivers.*—The following is a classification according to the seas or oceans into which the rivers flow.

(1.) The Arctic Ocean receives the Obi, Yenisei, Khantanga, Olenek, Lena, Indigirka, and Kolyma.

(2.) The Pacific Ocean receives the Anadir, Amour or Saghalien, Hoang-ho, Yang-tse-kiang, Si-kiang, May-kiang or Mekon, and the Meinam.

(3.) Into the Indian Ocean and its branches fall the Saluen, Irawady, Bramaputra, Ganges, Mahanuddy, Godavery, Kistnah, Cauvery, Tapti, Nerbudda, the Sinde or Indus, and the united waters of the Euphrates and Tigris.

(4.) The Mediterranean and its branches receive the Syhoun, which falls into the Levant; the Meinder and Sarabat, flowing into the Archipelago; the Kizil-Irmak, Aiala or Sakaria, and Rion, which fall into the Black Sea.

(5.) The Caspian receives the Ural or Iaik, Kur, Aras, and Kizilozen, and Lake Aral receives the Jihon or Oxus, and Sihoon or Jaxartes.

305. *Lakes.*—The Caspian Lake, or Sea, as it is usually termed, is the largest in the world; its water is less salt than that of the ocean, but is somewhat more bitter. This sea abounds with fish, the largest of which is the beluga, which is said to be a heavy load for three horses. There are also species of seals, porpoises, salmon, and a kind of herring. The sturgeon is the principal object of the fisheries.

306. The shores are frequented by multitudes of aquatic birds, as storks, herons, bitterns, spoonbills, geese, ducks, &c.

307. The Sea or Lake of Aral lies to the east of the Caspian, and is about one fourth in size. In Central Asia are lakes Balkash or Tengiz, Zaisan, Oubsa, Bosteng, Lop, Koko-nor, and Tengri-nor. The lakes of Po-yang and Tong-ting are in China; Lake Urumiyeh, in Persia. Lakes Goukcha and Van are in Armenia. The great salt lake of Koch-Hissar is in Asia Minor, and the Dead

Sea in Palestine. The waters of some of these lakes are intensely salt and bitter.

308. *Soil*.—The soil of this immense expanse of territory presents every possible variety, from the dreary confines of the Frozen Ocean to the centre of the tropical regions.

309. *Climate*.—The great highland of Asia causes in it two distinct climates. The whole of Asia to the north of the 35° N. lat. has what is called an excessive climate, that is, the winters are excessively cold, and the summer excessively hot. To the south of this line there is every variety of climate depending upon local circumstances.

310. *Minerals*.—All the precious and useful minerals are found in this continent.

311. Diamonds are found in India and Borneo; other precious stones in Ceylon, China, Persia, India, and Turkestan. Gold is found in the south and south-east of Asia, and also in Siberia and Japan; silver in China and Siberia. Tin, mercury, copper, iron, and coal, occur in many parts of Asia.

312. *Vegetation*.—The amount, diversity, and luxuriance of Asiatic vegetation is unequalled in the world. All the natural families of plants, from the lichens and mosses of the arctic zone to the vigorous vegetation of the tropical regions, are met with.

313. The whole continent may be divided into five great botanical regions. The first embraces the great Siberian slopes, upon the southern of which are forests containing birch, willow, juniper, maple, ash, pine, alder, fir, larch, poplar, aspen, and elm trees, and a great variety of berries. The intensity and duration of the cold in the northern regions prevent the thriving of any but the most hardy plants. During the short but intense summer the ground is covered with an immense profusion of flowering and aromatic plants. The second region is continued on the great central highland: little is known of the botany of this region, but on the south slopes of the table-land are found oaks, aspens, elms, hazels, and walnut trees.

314. The third region comprises the east slope of the table-land, which is clothed with immense forests of pines and oaks of great size, but which diminish rapidly as

they approach the sea. The soil is in many parts swampy, and abounds with wild desert marshes.

315. The fourth region embraces the western slope of the table-land as far west as the Caspian Sea. The eastern part of the Great Plain of Tartary is exceedingly productive: gardens, orchards, and corn fields, are spread over its surface; along the river courses the hardier kind of trees are met with, as the larch, beech, and firs. The extensive steppes afford excellent pasture grounds, upon which a number of wild and domestic animals are fed. The western part, however, exhibits the extremes of wretchedness and desolation: the district between the Ural and Caspian Seas is, perhaps, the most sterile in the world.

316. The Northern slope of the Caucasus is desolate in the extreme, but the East, South, and West declivities are clothed with magnificent forests of cedars, cypresses, oaks, beeches, and junipers; while various kinds of fruit flourish in great luxuriance. The vegetable productions of Mesopotamia and Syria are so numerous that a description of them would occupy many pages: fruits are most abundant, and of the finest quality. Wood is scarcely known in Mesopotamia; but in Syria the majestic cedar of Lebanon maintains the fame which it acquired in the days of Jewish greatness. In Asia Minor the mountain slopes are covered with majestic oaks, cypresses, planes, sycamores, olives, mulberry trees, and fig trees.

317. The fifth region comprises the South slopes of the central plateau: including the extensive territory of China Proper; the three great Asiatic peninsulas, Malacca, India, and Arabia, with the South shore of Persia and Beloochistan. Within this region are several tracts of pasture grounds depending on rain for their fertility, but the whole district is unparalleled for the abundance and luxuriance of its vegetation. Trees of various species are spread over the whole region, such as the bamboo, birch, chestnut, cypress, fir, larch, mangrove, myrtle, oak, palm, pine, plantain, poplar, teak, and willow: of hard woods,

aloes, eagle-wood, ebony, iron-wood, lingow, rose-wood, and sandal-wood : of fruits, the almond, apple, apricot, banana, banyan, bread-fruit, citron, cocoa, date, fig, lemon, lime, mulberry, olive, orange, peach, pear, plum, pomegranate, tamarind, vine, and walnut : and of spices, camphor, cassia, cinnamon, clove, mace, nutmeg. Several of these trees yield gums and dye ; and others are otherwise highly useful, as the cotton tree and the tea-plant. Grains of every kind are also most abundant : of rice there are no less than twenty-seven species.

318. *Animals.*—The mountains of Asia divide it into three zones as regards the distribution of animals ; namely, the northern, central, and southern zone.

319. In the northern region the Siberian forests harbour troops of rein-deer, elks ; brown, blue, and black foxes ; bears, gluttons, and several species of martins and squirrels ; the great polar bear inhabits the shores along the Arctic Ocean.

320. In the central zone are found the Bactrian or double-humped camel, the wild horse, about two species of antelopes ; tigers, and troops of dogs, jackals, and wolves prey upon the antelopes, asses, and wild horses. All the mountains are inhabited by the musk animal ; the western mountains are overrun by antelopes, gazelles, lions, panthers, cats, jackals, and monkeys. The wild ass inhabits the mountain regions. The single-humped or proper camel is a native of Arabia, though found in other parts of Asia wherever the Arabs have settled.

321. The southern zone teems with animal life. Antelopes and deer abound in Thibet and India. In Bengal is the *spotted axis*, and in the forests of Orissa is found the jungle-cow. In India there are few lions ; but this region and the districts to the E. and W. of it are overrun by fierce tigers ; the buffalo inhabits the banks of the rivers and lakes ; squirrels, peacocks, pheasants, and jungle-cocks abound in the forests between the Ganges and Indus. The forests of the Ghauts are inhabited by several species of bears. The elephant and one-horned rhi-

in the countries S. E. of India; the tapir is also found in these regions, with ourangs and gibbons. The waters of the Ganges abound with alligators. Birds, adorned with rich plumage, are in every zone. Vultures, eagles, falcons, buzzards, and owls inhabit the banks of the Indus. The islands along the Southern shore of the continent abound with parroquets of every variety of colour.

322. Of domestic animals the most important is the elephant, which is confined to the lowlands of India, Birmah, and Siam; next is the camel, the Bactrian or two-humped camel and the one-humped camel, the former chiefly inhabiting the N. E. of Asia; the latter is spread over Western Asia and Northern Africa. The other domestic animals of Central and Southern Asia are horses, mules, asses, buffaloes, beeves, sheep, and goats. In the rigorous climate of the north, the rein-deer supplies the place of all other domestic animals. Noxious reptiles abound in the southern regions.

323. *Fishes and Insects.*—The seas and rivers appear to possess every known kind of fish, and some that are peculiar. The insect tribes are numerous throughout the whole continent; the most destructive of these is the locust, which appears in countless swarms in the sandy regions of N. W. Asia, in Arabia, and Syria, and whose ravages are far more dreaded than the attacks of carnivorous animals.

324. *Races of Men.*—Within the limits of this continent is found a great variety of tribes and nations. The five principal are the Hindoos, the Chinese, the Tartars, the Arabs, and the Persians.

325. The Hindoos, Arabs, and Persians are generally considered to belong to the Caucasian or white race; and the Tartars and Chinese to be of the Mongolian variety.

326. *Political Divisions.*—In the following description of the different countries of Asia we shall consider them under the following heads: the Chinese Empire, Russia in Asia, India, South-eastern peninsula or India beyond the Ganges, Persia, Beloochistan, Affghanistan, Inde-

States.	Capital and Chief Towns.
<p><i>Chinese Empire :</i> Comprising China, Corea, Loo-choo, Formosa, Manchooria, Mongolia, Thibet, Soongaria, and Little Bukharia.</p> <p><i>Russia in Asia :</i> Comprising Siberia, Georgia, Mingrelia, Imeritia, portions of Armenia, Azerbaijan, and Ghilan; the Caucasus, and the Steppes of Astrakan, and the Kirgish.</p> <p><i>India.</i> — See Table of India</p> <p>The Kingdom of Iran, or Persia</p> <p>Afghanistan.</p> <p>Beloochistan.</p> <p>Independent Tartary, or Turkestan.</p> <p>Asiatic Turkey, or the Ottoman Empire.</p> <p>Arabia.</p> <p><i>Islands.</i> Empire of Japan. Ceylon. Java. Sumatra. Borneo. Celebes. The Moluccas, &c. Philippines.</p>	<p>Pekin, Nankin, Canton.</p> <p>Tobolsk, Irkutsk, Tiflis.</p> <p>Teheran, Ispahan, Tabreez, Shiraz, Meshed. Cabool, Candahar, Ghuznee, Peshawer. Kelat. Bokhara, Khiva, Samarcand, Khojend, Tashkend, Balkh. Smyrna, Kutaya, Erzeroum, Antioch, Aleppo, Damascus, Jerusalem, Baghdad, Bassora. Mecca, Medina, Mocha.</p> <p>Jeddo. Colombo, Trincomalee. Batavia, Samarang. Acheen, Bencoolen. Borneo. Macassar. Amboyna. Manilla.</p>

THE CHINESE EMPIRE.

327. This empire consists of three great divisions; viz., 1. CHINA PROPER; 2. CHINESE TARTARY; and, 3. THIBET. — The peninsula of COREA is tributary to

328. CHINA PROPER is bounded by the Chinese Sea on the south, the Pacific Ocean on the east, Thibet and Tartary on the west and north. The chief cities are, Peking, Nankin, and Canton; but it contains 40 or 50 of great extent, and vast population; and many hundreds of secondary magnitude, equal to our largest towns.

329. CHINESE TARTARY extends both to the north and west of China, and is bounded by Siberia on the north, Independent Tartary on the west, and Thibet on the south.

330. It is inhabited chiefly by the Mandshurs and Mongols; of whom the former conquered China in 1644, and still govern the empire. A great part of it is covered by the sandy desert of Shamo or Gobi; but Little Bucharia, immediately west of China, is traversed by chains of mountains, enclosing many fertile regions, of which the chief are Kashgar, Khoten, and Hami, with capitals of the same names. Yarkand is the great seat of inland trade.

Obs. The Mongols are a wandering, pastoral, warlike race, with broad faces and high cheek bones. From their country came the ancient Huns; and under the standard of Zingis Khan, their ancestors conquered the greater part of Asia and the east of Europe. The Mongols are rather allies than subjects of China.

331. THIBET is an extensive table land to the north of Hindostan, lying beyond the Himalaya chain, and between it and the Holkoun chain, in a bleak and rugged elevation. Its chief town is Lassa, where resides the grand Lama or spiritual sovereign of these regions in a splendid palace, said to contain numerous gold and silver images.

Obs. This spiritual sovereign is said to have the soul of his predecessor in a new body, and the influence of this superstition prevails through vast countries, and extends to China. There are even subordinate Lamas; but since 1791, when the Chinese took possession of Thibet, they have exercised all civil authority. One Lama, called the Teshoo, resides near the Bengal frontier, with a population of nearly 4000 priests.

332. The chief rivers of China are the Hoang-ho and the Kian-ku, or Yang-tse-kiang, each above 2000 miles

ber of Chinese live always in covered boats, on these rivers, and on the innumerable canals.

333. The largest of the Chinese islands are **Formosa** and **Hainan**. The **Chusan Islands** are a numerous group, small and fertile, lying off the east coast. The islands of **Loo-choo** are subject to China.

334. China produces abundance of rice, tea, and fruit; and is famous for its ingenious manufactures of silks, porcelain, earthenware, paper, &c. In return it receives some woollens and cottons from Britain and India; and also a large quantity of opium, which is an article of extensive consumption by the Chinese population. The introduction of opium into China (at that time contrary to the laws of the empire), led to the breaking out of war between China and Great Britain in 1842. This war resulted in the cession to Great Britain of the island of **Hong-kong**, off the entrance of the Canton river, and to the opening of the five ports of Canton, Amoy, Fuh-chow, Ning-po, and Shang-hae, to free commercial intercourse. Since that date, a large share of the English trade with China, previously limited to Canton, has become transferred to **Shang-hae**, the commerce of which is large and flourishing. The opium trade has subsequently been legalised. A later war between Great Britain and China, which terminated in 1858, involved the throwing open of several additional ports, both maritime and inland. Amongst the latter is **Hankow**, on the **Yang-tsze-kiang**, more than 600 miles from the sea.

Obs. The Chinese send numerous large junks to Japan and the oriental islands. They also carry on a vast inland trade between their provinces by canals; and they cultivate every acre of ground with singular profit and neatness. The *tea tree* is the most singular and valuable plant in China: it is an evergreen shrub, and grows much in the form of our gooseberry-bush; the leaves are gathered at different seasons, and thus form varieties for our teas; the finer sorts require extraordinary care in drying and preparing for sale, and some are dyed to give them a stronger colour.

335. China is celebrated for the great antiquity of its government; for its crowded population, its fine manu-

of its canal navigation ; and for its jealous and exclusive commercial policy.

Obs. All travellers in China have expressed their astonishment at the vast population. The precise amount, however, is very variously stated. Recent estimates by Morrison and Klaproth, founded on official publications, made it about 150 millions ; while a still later one in the Anglo-Chinese calendar, purporting also to be official, raises it to 360 millions. The truth probably lies between these extremes, and China may contain from 200 to 300 millions of inhabitants. The population of its Tartar dominions is still more uncertain, but may be estimated at from 8 to 10 millions.

From east to west the Chinese dominions extend 4900 British miles, and from north to south 2000 miles. They possess every variety of climate, from that of the north of England to that of the West Indies.

Near Peking is the imperial palace, consisting of many extensive buildings, with ornamental gardens, so beautiful as to appear the work of enchantment. Peking occupies a large space of ground, but the streets are wide, and the houses seldom exceed one story. The length of what is called the Tartar city is about four miles, and the suburbs are considerable. The houses, indeed, are neither large nor numerous ; but their neatness delights the eye of the visitor. *Nankin* is a still greater city, its walls being seventeen miles round. *Canton*, also of great magnitude, was, till recently, the only port in which Europeans were allowed to establish factories.

The great canal, above 500 miles long, of greater width than any in Europe, is said to have had 30,000 men employed forty-three years in completing it. Every province also has its canal, with branches to each town and large village. The great wall is the most prodigious work of art in the world, and was built 2000 years ago, to protect China from the invasions of the Tartars. It is carried over mountains 5000 feet high, across valleys, and on arches over rivers. In many important passes it is doubled and trebled. At every hundred yards is a tower or bastion. It is in general twenty-five feet high, and fifteen thick.

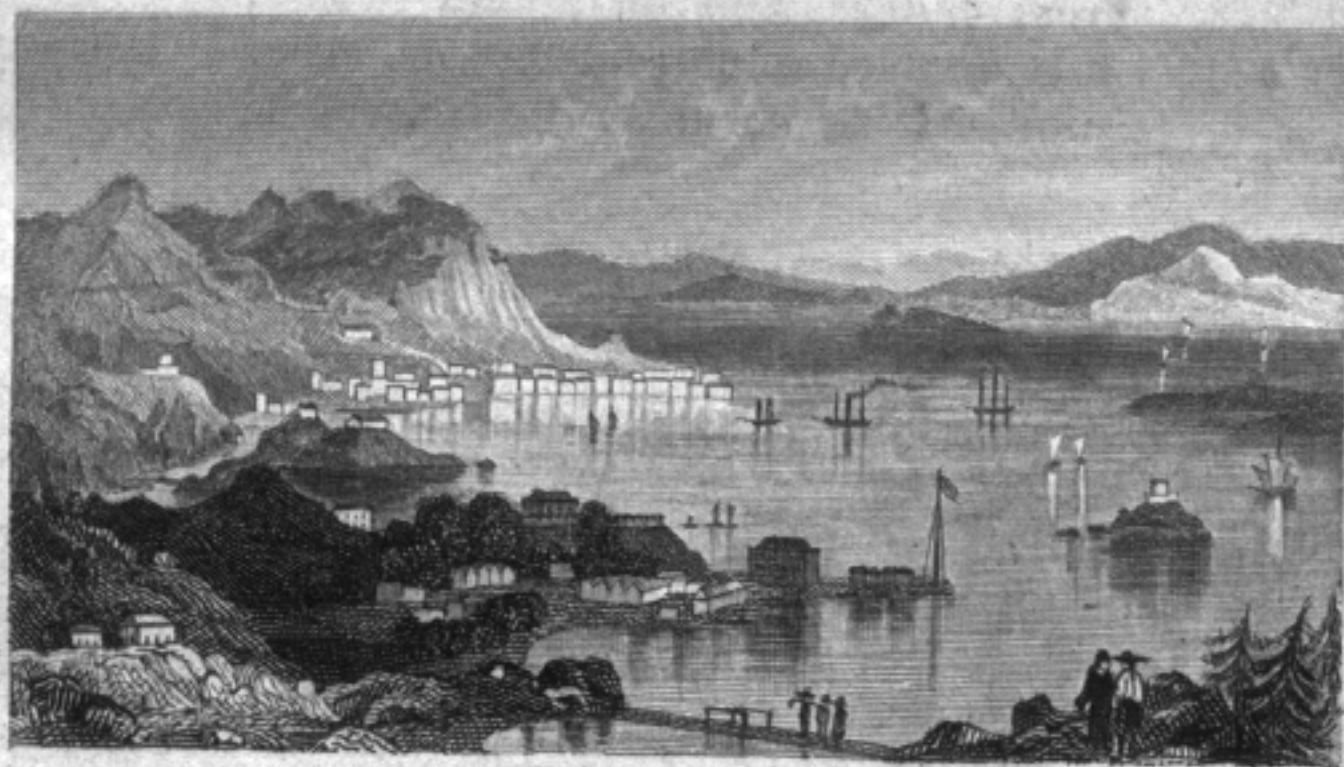
336. The government of China is a complete despotism, the emperor pretending to rule it as a viceroy of the divinity. The administration is in the hands of numerous mandarins, who are chosen on the ground of proficiency in learning, respecting which they undergo a strict examination. They form large boards in the capital, who advise his Majesty on every subject, and from them are



THE KREMLIN, MOSCOW.



RUSSIANS.



HONG KONG HARBOUR, CHINA.

tion, China is, on the whole, better governed than any other Asiatic country. They have long known the art of printing, not with moveable types, but on thin wooden blocks, one for every page. They have large works on history and science, many poems and novels, and esteemed works by Confucius, Mencius, and other philosophers; but their literature in no branch is equal to that of Europe. The language is very peculiar, having a letter or mark for every word, of which there are at least 30,000. Its acquisition thus appears to present great difficulties; but these have been overcome by Dr. Morrison and other learned missionaries, who have translated the Holy Scriptures into it, and circulated them among the people.

337. By very ancient policy, all foreigners are excluded from China; and a very restricted intercourse only was till recently permitted at Canton, a port in the South, at Maimatchin, a fortress on the Siberian frontier, and at Yarcand in Tartary. They consider all other nations as barbarians, and themselves the first inventors and artists, having, in fact, known block-printing, the compass, gunpowder, &c. in remote ages. Yet the people begin to feel the superiority of the English; and when an intercourse has been opened, either for trade or other purposes, they have eagerly cultivated it, till prevented by the rigorous prohibitions and penalties of the government.

Obs. Chinese authentic history extends to about 2000 B. C., and the same government has subsisted, with a few changes of dynasty. The state religion is pure deism; and the sovereign is regarded as God's representative, and the father of the nation: but other religions and many gross superstitions prevail. The royal revenue is one tenth of the produce of the land, received in kind, and amounts to about 66 millions sterling. Both the army and navy are very numerous, but have proved wholly unfit to contend with a European force.

RUSSIA IN ASIA.

338. RUSSIA in Asia consists of two entirely distinct parts, Siberia, and the countries on the Caspian. Siberia

is divided into two great governments, that of Tobolsk in the west, and Irkutsk in the east. It was conquered by Russia about a century and a half ago, and in a great measure peopled by criminals sent thither into exile.

339. The Kurile Islands are a considerable group belonging to Asiatic Russia, extending to the south from Kamtschatka. The Fox Islands extend between Asia and America. The sea north of Siberia is filled with ice, and is commonly unnavigable.

Obs. This vast extent of land, containing three millions and a half of square miles, is not supposed to contain above two millions of barbarous inhabitants, chiefly Tartars, and others called Tchuvashes, Votiaks, Ostiaks, Voguls, Tungusians, and Kamtschatdales.

340. The principal cities in Siberia are Tobolsk and Irkutsk. The north produces only valuable furs and skins; but in the south are some corn lands and very rich pasturages. The Obi is the chief river; the Irtysh, the Lena, and the Yeniseï, are also very considerable.

341. The countries on the Caspian, and extending to the Black Sea, are chiefly Astrachan, Georgia, and Circassia. The last two are traversed by the great mountain range of Caucasus, the highest pinnacle of which, Elburz, is 18,493 feet high. In its heights are many rude independent tribes. The Circassians are celebrated for the bravery of the men and the beauty of the females. Russia has made great efforts to subdue them, but hitherto without success. Numerous slaves of both sexes are imported from these countries into Persia and Turkey.

342. The chief cities are Astrachan and Derbend on the Caspian; and Tiflis, the capital of Georgia. Most of this territory has been conquered from Persia.

INDIA.

343. INDIA is formed by nature into three great divisions:—

344. I. The mountain territory along the whole northern frontier, consisting of the heights and slopes of the

on the globe, some of them being above five miles in height, and covered with perpetual snow. The valleys between their successive ridges are narrow, but many of them fertile and beautiful.

345. II. The great northern plain of Hindostan Proper, watered by the Ganges and the Indus, two of the largest rivers in Asia, with their tributaries. It is the finest part of India, and one of the most fruitful and populous regions in the world.

346. III. The southern peninsula, stretching in a triangular form into the Indian Ocean, terminating in a point at Cape Comorin. High ranges of hills, called the Ghauts, run parallel to the coast; the eastern Ghauts to that of Coromandel, and the western to that of Malabar. The interior consists of the elevated table-lands of the Deccan and Mysore. This region is fertile, though not equally so with the Gangetic provinces; yet its hills furnish abundance of valuable timber, and its interior plains are suited to the growth of indigo, sugar, and the cotton-plant.

347. The political divisions of India are as follow :—

1. BRITISH INDIA.
2. PROTECTED, or SUBJECT, STATES.
3. INDEPENDENT STATES.

348. British India embraces those portions of this vast country which form a part of the British Empire, and are under the direct rule of the British Crown.

349. The Protected, or Subject States, comprehend those parts of India which are under native rulers, but which are connected by treaties of alliance with the British Government, and which are virtually subordinate to British control.

350. The Independent States (now reduced to three in number) are under native rulers, who are independent of British control.

351. BRITISH INDIA now comprehends nearly two-thirds of the immense region which extends from the

and a population which numbers upwards of 120,000,000. Its various provinces, with the chief towns contained in each, are named in the following table :—

352. PRESIDENCY OF BENGAL.

Provinces.	Towns.
Bengal Proper -	- Calcutta, Dacca, Moorshedabad.
Behar -	- Patna, Bahar.
Benares -	- Benares, Mirzapore.
Oude -	- Lucknow, Fyzabad.
Allahabad -	- Allahabad, Cawnpore.
Agra -	- Agra.
Delhi -	- Delhi, Meerut, Hurdwar.
Rohilcund -	- Bareilly.
Kumaon -	- Almora.
Simla -	- Simla.
The Punjaub -	- Lahore, Amritsir, Mooltaun.
Nagpore -	- Nagpore.
Cuttack -	- Cuttack, Juggernaut.

353. PRESIDENCY OF MADRAS.

The Carnatic -	- Madras, Arcot, Tranquebar, Trinopolis, Madura.
The Circars -	- Masulipatam, Coringa.
Coimbatore -	- Coimbatore, Ootacamund.
Malabar -	- Calicut, Cananore.
Canara -	- Mangalore.

354. PRESIDENCY OF BOMBAY.

The Concan -	- Bombay.
Khandeish (part of) -	- Surat, Malligawm.
Poonah -	- Poonah.
Sattara -	- Sattara.
Sinde -	- Hyderabad, Shikarpore, Kurra- chee.

355. THE PROTECTED, or SUBJECT STATES of India include an area of 400,000 square miles, and a population of more than 50,000,000. Their names, with the chief towns of each, are as follow :—

States.	Towns.
Hyderabad, or Dominions of the } Nizam -	Hyderabad, Aurungabad.
Mysore -	Mysore, Seringapatam, Banga- lore.

States.			Towns.
Travancore	-	-	Trivandrum.
Kolapore	-	-	Kolapore.
Sawunt-Warree	-	-	Sawunt-Warree.
Indore, or Holkar's Dominions	-	-	Indore.
Gwalior, or Dominions of Scindia	-	-	Gwalior, Oojein.
Bhopaul	-	-	Bhopaul.
Bundelcund States	-	-	Punnah.
Rewah	-	-	Rewah.
Guzerat, or the Guicowar's Dominions	-	-	Baroda, Cambay.
Cutch	-	-	
Rajpootana	-	-	Bhooj.
			Oodeypore, Jhodpore, Bikaner, Jeysulmerc.
Bahawalpore	-	-	Bahawalpore.
Hill States	-	-	Kanum, Nahun.
Sikhim	-	-	Tumlong.

356. THE INDEPENDENT STATES have together an area of about 98,000 square miles, and a population of between four and five millions. They consist of the following:—

States			Towns.
Cashmere	-	-	Serinnger (or Cashmere), Islamabad.
Nepaul	-	-	Khatmandoo, Ghoorka.
Bootan	-	-	Tassisudon.

357. Hindostan (or northern India, that is, the region watered by the Ganges and Indus) was for several centuries the seat of the Mogul Empire, established by conquest from Tartary and Afghanistan, and considered the most powerful and splendid in the East. Within the last century its power was almost extinguished by the rise of the independent Mahratta chiefs, and the rebellion of its own nabobs or governors; but these new princes, becoming involved in contests with the growing power of Britain, were one by one reduced to the necessity of submitting to her arms and counsels. Most of the powers which formerly reigned in India have thus either ceased to exist, or have become reduced to a mere condition of dependence and vassalage. A last abortive effort to re-assert the sovereign rule of the Great Mogul was

city of Delhi—the former seat of Mogul sovereignty—was for a time in the hands of the insurgents.

358. From the period when, upwards of two centuries since, the subjects of Great Britain first began to acquire territorial possessions on the Indian soil, down to the year 1858, the ruling power over British India was exercised by the East India Company—a mercantile body, originally incorporated for the purpose of trading in the Indian and Chinese Seas. The exclusive commercial privileges of the Company were abolished in 1833, but their political functions continued to be exercised for a further period of twenty-five years. In 1857, however, a wide-spread insurrection on the part of the sepoy, or native troops, employed in the Company's army, shook for a time the sovereign power of Britain in this part of the globe, and necessitated the most active measures on the part of the home government in order to ensure its suppression. This led to the transfer, in the following year, of the political functions of the East India Company to the hands of the Crown, and in 1858 the direct sovereignty of the Queen of England over the whole of British India was proclaimed throughout its vast area.

359. The local government of British India is exercised through the medium of a governor-general and council, sitting at Calcutta. The governor-general is also governor of the Bengal Presidency, the most extensive of the three presidencies into which British India is divided. There is likewise a governor appointed for each of the two other presidencies—Madras and Bombay.

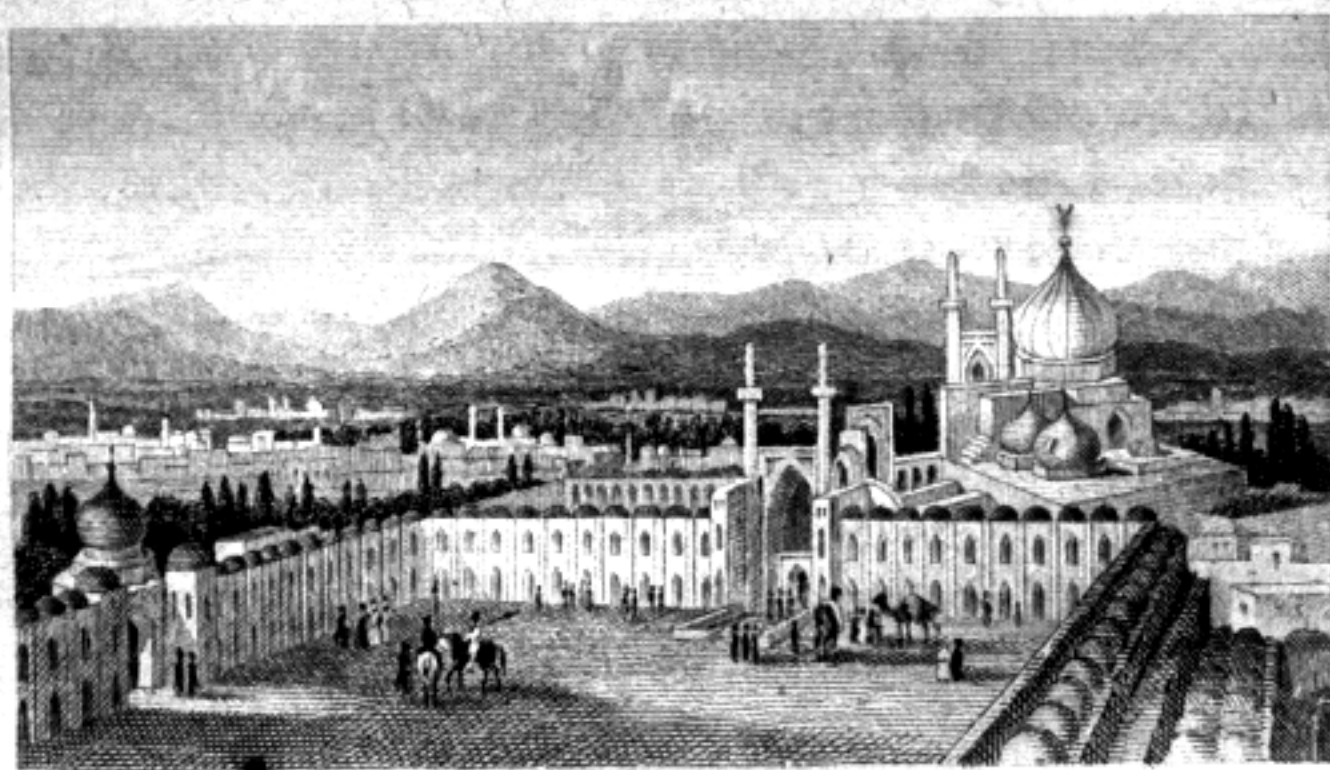
360. India has been celebrated, from the earliest ages, for its abundant natural wealth, and its productions—both in the mineral and the vegetable kingdoms—are undoubtedly various, and of considerable amount. They include the diamond and other precious stones, besides the more truly valuable articles of iron and coal. Both the latter are now worked to a considerable extent. The diamond mines are now of little value. Rice, opium, indigo, cotton, and sugar are among its productions.



DELHI, PALACE OF THE KING.



INHABITANTS OF SCINDE.



ISPAHAN.

population is concerned, is by no means a rich country, and the great mass of the people are in a condition of absolute poverty. The yearly revenue of British India falls considerably below the annual expenditure on its government.

361. About seven-eighths of the immense population of India consist of native Hindoos; a peculiar race, of black complexion, but small and elegant forms and features, and of mild and polished manners. They have many learned books written in the Sanscrit, an ancient and now dead language. They are extremely superstitious, worshipping a triple deity, Brahma, Vishnu, and Siva, with various subordinate powers, and even rivers and animals. They go in vast crowds on pilgrimages, often of more than a thousand miles, to their favourite shrines, as those of Hurdwar, Benares, and Juggernaut. They are also impelled by fanaticism to strange and barbarous deeds, throwing themselves under the wheels of their sacred chariots, or drowning themselves or their children in the Ganges; widows, also, have been accustomed to burn themselves on the funeral pile of their husbands: but these enormities are now studiously prevented by the British government. The Hindoos have also been formed by superstition into classes, or castes, the higher among whom will not eat or speak with those of inferior condition. These castes are, in the order of their dignity, the Brahmins, or priests; the Cshatryas, or soldiers; the Vaisyas, or tradesmen; and the Soodras, or labourers. The Hindoos have peaceably obeyed the successive nations by whom they have been conquered, provided they were allowed to retain their own religion and institutions. The remaining eighth part of the population consists of the conquering races of Tartars and Afghans, who brought with them the profession of the Mahometan religion. The number of Europeans is very small, though they are now masters of the country.

362. The presidency of *Bengal* includes the finest and most populous portions of British India. Calcutta, its chief

and the mansions of wealthy individuals are exceedingly splendid; but the native quarter, or black town, as usual in India, consists of miserable hovels, arranged in narrow, confined and crooked streets. The city contains, however, a number of intelligent and opulent natives. In this presidency are also Agra and Delhi, the successive capitals of the Mogul emperors, and still adorned with their splendid palaces and tombs; Benares, the chief seat of Hindoo religion and learning; and Dacca, where the finest muslins in the world are manufactured.

363. The presidency of *Madras* comprises the greater part of the coast of *Coromandel*, including the *Carnatic*, the *Circars*, and various other detached districts. *Madras* is a large city, though not equal to *Calcutta*. *Arcot* is the capital of the *Carnatic*; *Tanjore* is a flourishing city, with a splendid pagoda; and *Masulipatam* is the chief seat of the manufactures of calicoes and gingham.

364. *Bombay* is the smallest of the presidencies, consisting of various detached districts in the west of India. The city of that name, situated on an island, is the seat of a great trade, carried on both by British and Parsee merchants. In this presidency are also *Surat*, the most flourishing and commercial city of western India; *Cam-bay*, the metropolis of the fine province of *Guzerat*; and *Poonah*, formerly the capital of the *Mahratta* confederacy.

365. The Independent States of India are all situated in the north, along the line of the *Himalaya* mountains.

366. *Cashmere* was only formed into a distinct territory in 1846, previously to which it had formed part of the *Sikh* territory, and was attached to the province of the *Punjaub*. It includes the celebrated valley of *Cashmere*, which is inclosed between some of the highest mountains of the *Himalaya* system.

367. *Nepaul* embraces a narrow strip of territory along the southern slopes of the *Himalaya*, stretching for a distance of nearly 500 miles in the direction of east and west. Its ruler (who bears the title of *rajah*) proved

368. *Bootan* is to the eastward of Nepaul, and is governed by a ruler entitled the deb-rajah. Its inhabitants are hardy mountaineers, altogether different in appearance and habits from the population of the low and hot plains of the Ganges valley.

369. The Laccadive and Maldivé islands, west of Hindostan and Ceylon, are unimportant, but very numerous: the Maldives are said to be more than thirteen hundred in number. Their most valuable product is cowries, a species of shells current in the East as money.

370. Ceylon, one of the largest and finest islands in the world, is divided from the mainland of India by the channel of Palk's Strait. Its maritime portions, previously under Dutch rule, fell under the power of Britain in the early part of the present century. The native capital, Candy, was taken by the English in 1815. The island is mountainous, but in many parts fertile, yielding the tree whose bark forms the valuable spice called cinnamon, and coffee in abundance. Elephants are here numerous, but small and tractable; the rocks abound in various gems; and the sea between it and the continent contains the richest pearl fishery in the world. Colombo, on the west coast, and Trincomalee, on the north-east side of the island, are the two most important of the maritime towns. Colombo is the capital.

INDIA BEYOND THE GANGES.

371. Under this general name is comprehended an immense country on the east of the Bay of Bengal, which may be divided into the British territories, the Birman empire, Siam, and the empire of Anam or Cochin-China.

372. THE BRITISH TERRITORIES were obtained by treaty in 1826, after the successful war against the Birmese. They consist of Assam, Arracan, Mergui, and Tenasserim, which, with Malacca, obtained from the Dutch in 1824, in exchange for some districts in the islands, comprehend nearly the whole eastern coast of the Bay of Bengal. They are in many parts fertile, but rudely cultivated.

Assam contains large forests of the tea-plant. To these provinces is now added Pegu, formerly a part of Birmah, but which was ceded to Britain at the close of the later Burmese war, in 1852. The chief town of Pegu is Rangoon, which lies in the delta of the Irawaddy, and has great trade. Moulmein, in the Tenasserim provinces, is also a flourishing seat of commerce.

373. On a small island at the southern extremity of the Malay peninsula, Britain has founded the town of Singapore, which has become remarkably flourishing, and a great part of the trade of the surrounding countries centres in it. She also possesses the small but fertile island of Penang (or Prince of Wales Island), which lies off the west coast of the Malay peninsula.

374. THE BIRMAN EMPIRE was very powerful, till humbled in successive contests with Britain. The first Burmese war, terminated in 1826, stripped Birmah of Arracan and the other territories above enumerated, and the second, concluded in 1852, involved the cession to Britain of the rich province of Pegu, the finest part of her dominions. Birmah is traversed from north to south by the great river Irawaddy; and the territory is productive, particularly in teak timber, a valuable species, more durable than the European oak. The Birmans are estimated at about five millions, and, unlike the Hindoos, are brave, lively, and inquisitive.

375. Their religion and literature are entirely different, belonging to the system of Boodh, whose votaries were long ago expelled from Hindostan. The chief military force consists in war-boats well armed, which fight in the channel of the river. Ummerapoora was the capital till lately, when the seat of government was transferred to Ava.

376. SIAM consists of a fertile valley between two ranges of mountains, and watered by the noble river Meinam. It is well fitted for sugar, rice, and other tropical products, but the cultivation and trade are chiefly in the hands of the Chinese. The population is about three millions.

in a great measure of houses floating in the water. The elephants of Siam are famed for their size and beauty.

377. The eastern countries of CAMBODIA, TSIOMPA, and TONQUIN, have all, within the last thirty years, been subjected by COCHIN-CHINA or Anam. The king of that country, having been driven for some years into exile, obtained the assistance of some French officers, through whom he formed a navy and army on the European plan, and thus achieved all those conquests. The chief river is the Maykiang, which flows through Cambodia. The forests are very extensive, and contain many trees yielding rich gums, particularly those called gamboge and gutta percha.

378. Tonquin is the most fertile and populous of these countries ; and its capital, Kesho, the largest of the cities ; but both are little known. All these countries are supposed to contain about five millions of people. The residence of the sovereign is at Hue, in Cochin-China. The city and province of Saigon, to the south of Cochin-China, have recently passed under the dominion of France.

379. *Laos* is a mountainous country in the interior, partly subject to Anam, partly ruled by independent chiefs.

380. Opposite to the coast of Malacca are the islands of Andaman and Nicobar, inhabited by an almost savage race of people. A British settlement has been formed on the Great Andaman, of convicts from Bengal.

PERSIA.

381-2. PERSIA is bounded on the north by the region of the Caspian, and on the south by the Persian Gulf ; it contains the provinces of Azerbijan, Mazanderan, Irak-ajemi, Khuzistan, Fars, Kerman, and Khorassan. The principal towns and cities are :—Tcheran, the present residence of the shah or sovereign, which is little more than a standing camp, chosen on account of its vicinity to the Russian and Tartar frontier. Ispahan, the capital under Abbas, was one of the most splendid cities of the East but is now

much decayed. Shiraz is equally celebrated for the beauty of its climate and environs, and the men of genius, Hafiz and Sadi, who made it their abode. Hamadan, the ancient Echatana, Sultania, and Tabreez, have at different times been the residence of princes, but are all now in decay.

383. *Persia* is a hilly country, with extensive tablelands, but some very fertile plains. Its intercourse with foreign nations is carried on from the Persian Gulf, an arm of the sea, in which are the islands of Ormus and Gombroon, once noted for their trade. The chief commercial intercourse is carried on by caravans, with Turkey, on the one hand, and India on the other.

384. From Persia are brought silks, carpets, leather, pearls, and gold and silver lace.

Obs. 1. The fruits, vegetables, and flowers of Persia are delicious. Pearls are found in the Gulf of Bassora. The sheep of this country are deservedly esteemed for their flavour and for their fleece; they are remarkable for the size and fatness of their tails, some of which weigh 30 lbs.

2. The Persians are celebrated for their vivacity, their gay dresses adorned with jewels, their humanity and hospitality. They are distinguished for learning, and excel particularly in poetry. The Persian is the classic language of the East, and the language of intercourse at court, as French is in Europe. The Persians are a handsome people, and the females are at great pains to heighten their beauty by art.

3. This country, whose power and splendour in ancient times is so amply recorded by sacred and profane writers, and was revived under Abbas the Great, has, by long-continued internal dissension and by inroads of barbarous neighbours, been reduced to the rank of a second-rate kingdom. Latterly it has been encroached on by the Russians, and forced to yield some of its finest provinces.

385. **AFGHANISTAN** includes the country of the Afghans, with the provinces of Segestan and Herat. The country is very mountainous. The Afghans are a brave people, with some free institutions, and have repeatedly conquered both Persia and India. The kingdom of Cabool, at the beginning of this century, was

and Cashmere, in Hindostan, and Balkh in Tartary. Shah Shujah, the king, in 1809, was expelled by his brother, when various claimants arose and the monarchy was split into a number of petty principalities. All its foreign possessions were then lost, Runjeet Singh seizing upon Lahore and Cashmere. The Shah of Persia then formed the plan, with the assistance of Russia, to obtain the chief influence over these countries. He was repulsed in an attack upon Herat, but gained the alliance of the chiefs of Cabool and Candahar. This being considered dangerous to the security of the British empire in India, Lord Auckland, the governor-general, formed an alliance with Runjeet Singh for the restoration of Shah Shujah. A British force accordingly entered the kingdom, where it endured severe hardships, but met no serious opposition, unless at the fortress of Ghuznee, which was captured in 1839. But the mountain tribes soon showed symptoms of discontent; and, on the British troops quitting Cabool on capitulation in 1841, they were treacherously attacked and massacred to the number of 17,000, including camp followers, &c. After amply avenging this disaster, and regaining their prisoners, the British troops finally evacuated the country in 1842.

Obs. The cities of Afghanistan, situated in high and fertile valleys between the mountains, enjoy a fine climate. Cabool, the capital, has about sixty thousand inhabitants. Candahar and Ghuznee are famous cities, but the latter is greatly decayed. Herat, a great commercial city in the west, near the Persian frontier, forms the capital of an independent principality, and has 45,000 inhabitants.

386. South from Cabool is the country of Seistan, composed in a great measure of sandy deserts; BELOOCHISTAN, a rugged hilly tract, inhabited by the Belooches, a race of daring freebooters; Kelat is the capital: lastly, Mekran, a maritime province, whose chief town is Kej. All these countries are very barren and thinly inhabited.

INDEPENDENT TARTARY.

387. This extensive region is celebrated as forming the

distinguished as the basis of the wide empire of **Timur**. It consists of an immense plain, many parts of which are barren, but others tolerably fertile; numerous horses and cattle are reared, and their conquering armies consist chiefly of cavalry. The Tartars, though rude, are extremely hospitable.

388. The chief rivers of Tartary are the **Jihon** or **Oxus**, and the **Sirr** or **Sihon**; and the country borders on the great lakes or inland seas of the **Caspian** and the **Aral**.

389. The chief divisions of Independent Tartary are, —

(1.) The territory on the **Oxus**, or **Great Bucharía**, once the seat of the empire of **Timur**, being watered by that river and the **Kohuk**, is fruitful, yielding abundance even of rice and silk. **Bokhara** is now the chief city, with numerous monasteries and colleges, and supposed by **Sir A. Burnes** to contain 150,000 inhabitants. **Samarcand** was a most splendid city when **Timur**, the great Asiatic conqueror, made it his capital. It still contains his tomb and other monuments, but is much decayed, containing scarcely 10,000 people.

(2.) **Ferghana**, on the **Sihon**, contains many fruitful plains, and the large cities of **Koukan**, **Khojand**, and **Turkestan**.

(3.) **Balk**, the ancient **Bactria**, on the southern side of the mountain range of **Indian Caucasus**, was anciently the seat of a powerful Greek kingdom, and the capital continued flourishing till it was lately desolated by the ferocious mountain ruler of **Koondooz**, and is supposed not to contain now above 2000 houses. The same chief holds sway over several small mountain districts at the head of the **Oxus**. The principal is **Budukshan**, famous for its mines of rubies and lapis lazuli; but they are not at present worked.

(4.) **Khiva** is a tolerably fertile and cultivated tract, at the mouth of the **Oxus**, where it falls into the sea of **Aral**. It was formerly a powerful kingdom, named **Kharism**. The **Khan** still claims sovereignty over a vast tract of desert, inhabited by wandering **Turcoman** tribes, supposed to

compose 140,000 families. They are a rude race, but have noble horses, with which they perform perpetual forays into Persia and elsewhere, carrying off goods, cattle, and particularly slaves. The Khan had lately about 15,000 belonging to Russia, and the expedition sent by the emperor to release them failed; but they were liberated on the intercession of the British envoy.

(5.) Extensive plains, or steppes, in the north, are tenanted by the three hordes of the Kirgishes, a rude pastoral race, addicted to plunder.

ASIATIC TURKEY.

390. Asiatic Turkey consists of a range of beautiful and fertile countries, once rich and flourishing, and the theatre of the greatest events in ancient history. At present, however, Turkish oppression and anarchy have reduced them to a state of poverty and insignificance.

391. The principal divisions of Asiatic Turkey are, Asia Minor, Syria, Palestine, Armenia, and Irak-Arabi. These are subdivided into pashálics, governed by pashás appointed by the Grand Signior, but who often assume independent power. Syria, Palestine, and a part of Asia Minor were formerly under the power of the Pasha of Egypt, but in 1841 the British navy, under Stopford and Napier, expelled his forces, and restored them to the Porte.

392. The mountains and rivers of Asiatic Turkey are much celebrated in history. The principal mountains are, Taurus and Olympus, in Asia Minor; Ararat, in Armenia; Lebanon, in Syria; Hermon and Tabor, in Palestine. The chief rivers are, the Euphrates, the Tigris, the Orontes, and the Jordan. The principal lakes are, Asphaltites, or the Dead Sea, and Tiberias, anciently the Sea of Galilee; both in Palestine.

393. ASIA MINOR is a mountainous territory, with high table-lands in the interior, and rich plains on the sea-coast. Smyrna, the capital, is the chief seat of the Levant trade, and from it are exported fine carpets, silk, goats'

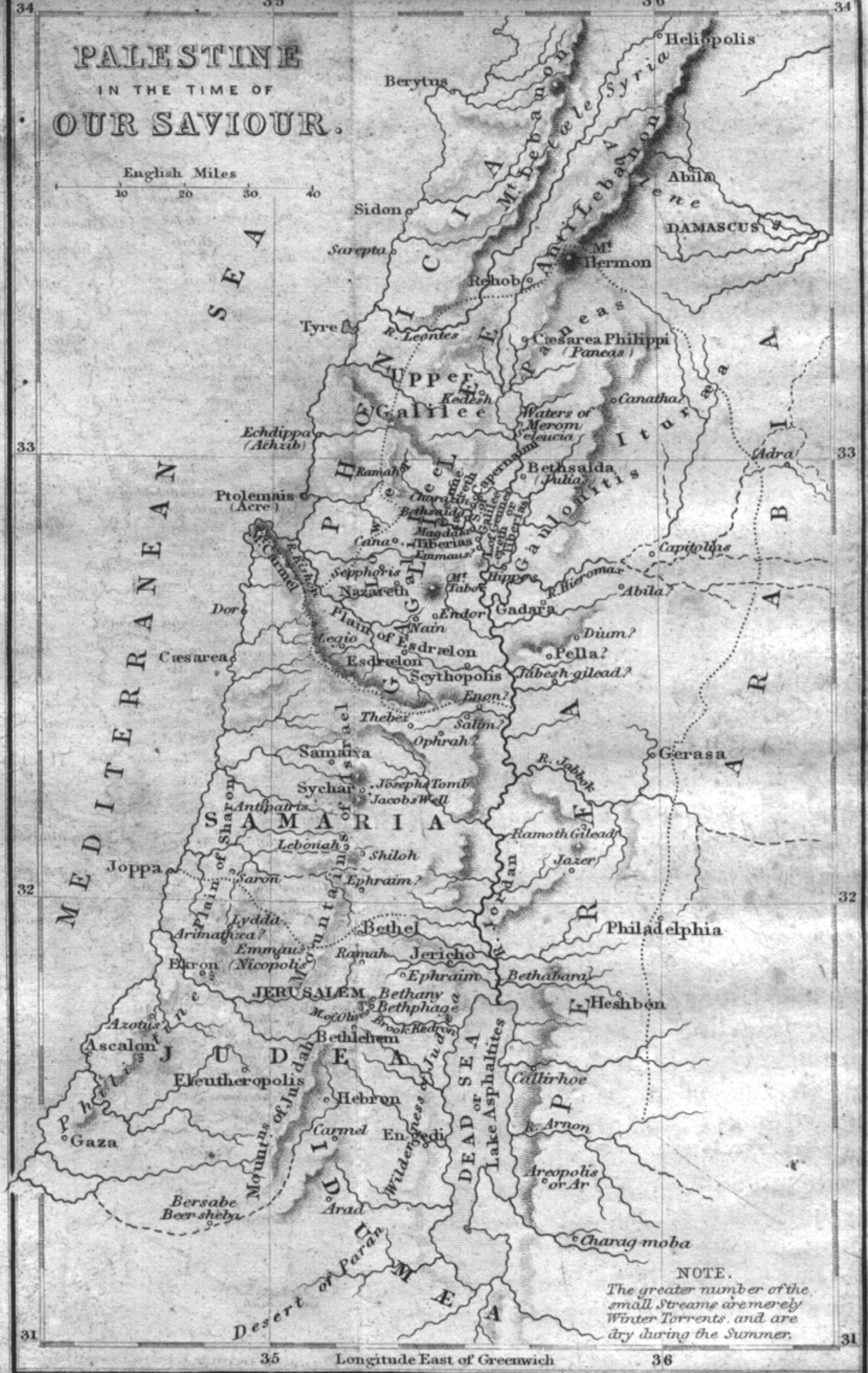
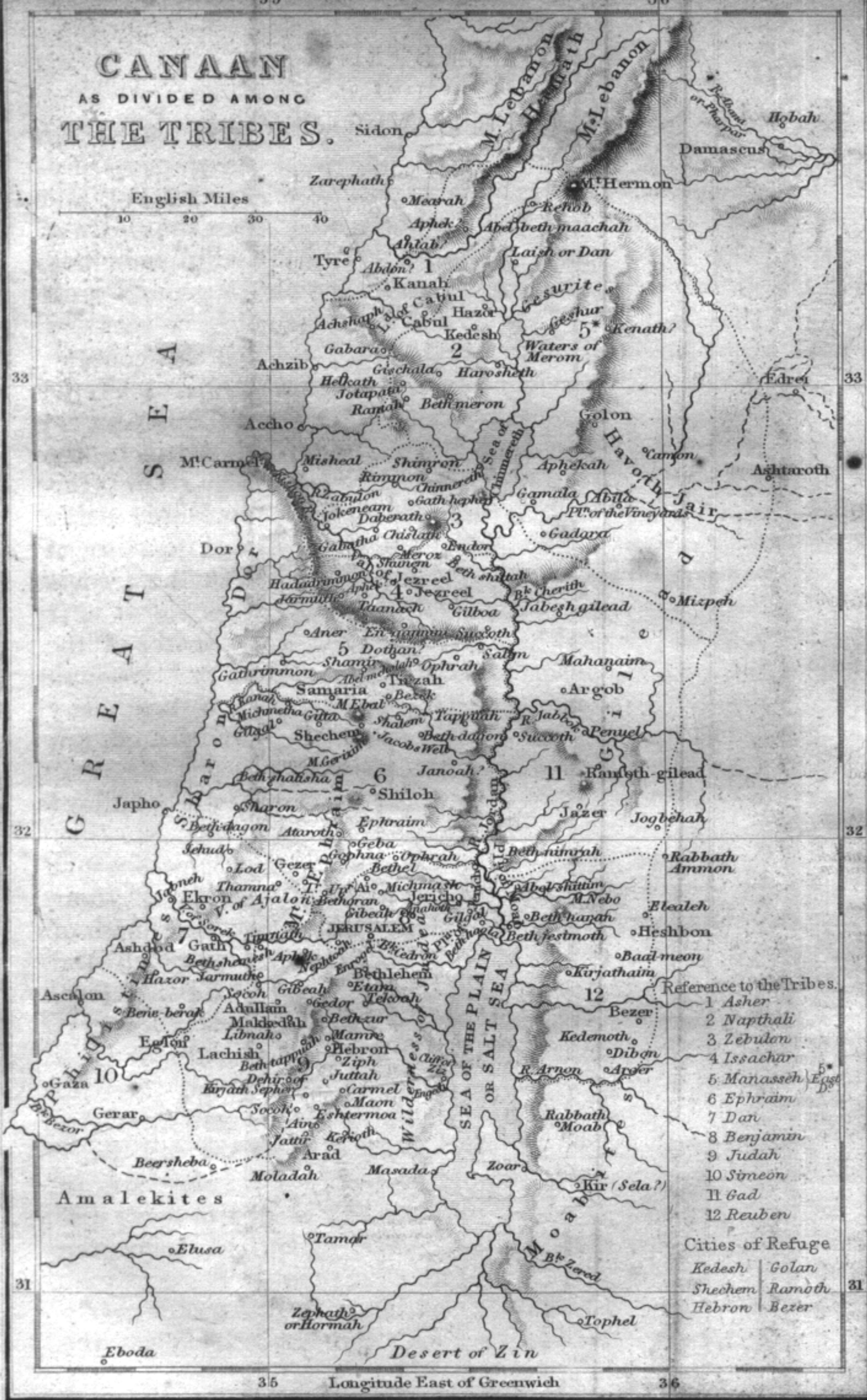
hair, rhubarb, oil, and fruits. Smyrna was one of the seven churches of Asia; the other six, Pergamos, Thyatira, Sardis, Ephesus, Laodicea (now *Eski-hissar*), and Philadelphia (or *Allah-shehr*), are mostly in ruins. Brusa, Koniye, Tocat, and Sivas are now the chief inland cities. Trebisonde, on the Black Sea, has recently become a great commercial place.

394. SYRIA, a mountainous but very fruitful country, has suffered much from anarchy, but is now delivered from the Pashá of Egypt. A number of independent tribes inhabit the heights of Lebanon. Antioch, the ancient capital of the East, is much decayed; but Damascus and Aleppo are still great and flourishing cities. There are magnificent ruins of the Temple of the Sun at Balbec, and of the ancient city of Palmyra, on the borders of the desert.

395. PALESTINE is distinguished as the theatre of the miracles and great events of Scripture history. Though mountainous, and in many parts rugged, it has many fertile districts, which were anciently well cultivated, but are now nearly deserted.

396. Jerusalem is in the midst of the central chain of mountains which runs north and south through Palestine, on the boundary line between the tribes of Benjamin and Judah, thirty-three miles from the sea, and twenty-four from the Jordan, and nearly the same distance north of Hebron. It occupies an irregular promontory in the midst of a confused sea of rocks, crags, and hills. Here, on her rocky heights, she sits dreary, silent, and solitary, amid surrounding desolation. The promontory upon which the city is built begins about a mile or more to the north-west of it, at the head of the valleys of Jehoshaphat and Gihon: these valleys gradually fall away on the right and left, and, sinking deeper as they run in a circuitous route, unite their deep ravines at some distance south-east of the city, and many feet below the level of its walls.

397. The valley of Jehoshaphat on the north runs nearly



south, and opens a deep defile below the eastern walls of the city, between it and the Mount of Olives. The valley of Gihon pursues a southerly course for some distance, then sweeps in a bold angle around the base of Mount Zion, and falls by a rapid descent into a deep narrow water-course, which continues in an easterly direction to its junction with the valley of Jehoshaphat.

398. Near the south line of the valley of Jehoshaphat, before it turns to the south, a slight depression begins at the north gate of the city. This depression, the head of the valley of the Tyropæon, or cheesemongers, continuing south through the city, divides it into two sections; of which the eastern is terminated by Mount Moriah, on which stood the temple. The western division is terminated by Mount Zion, where was David's house, and the royal residence of his successors.

399. The city was again traversed by another valley from south-west to north-east, with a slighter depression, north of the mounts Zion and Moriah, forming two slight eminences, Acra and Bezetha; the first on the north, opposite Zion, the other north-east, above Moriah. The city was thus situated upon four hills, of which the two on the north now stand but little above the elevated platform of the city; while the two on the south, after all the waste of ages, still rise to bold commanding heights, surrounded each, on three sides, by deep natural trenches.

400. Jerusalem retains few traces of her ancient grandeur. The site of the temple is occupied by the Mosque of Omar, a splendid Turkish sanctuary, to which neither Jew nor Christian is allowed access under any circumstances. Beneath the platform of the mosque, and within the walls, are some concealed crypts, which are supposed to be the remains of the ancient foundations which Solomon laid at the foot of Mount Moriah, to rear the lofty groundwork of his temple. Two of these, 19 feet wide, opened a magnificent passage underground from the Tyropæon on the south up to the Temple.

401. "The arches are of hewn stone, and the noblest I have seen in the country. As I walked through the broad

aisles, in a stilness broken only by the sound of my footsteps, it was a thrilling thought: I was treading one of the avenues through which the tribes had passed to the Temple. I seemed to see the throng of worshippers and to hear their chant: 'I was glad when they said unto me, let us go into the house of the Lord. I will pay my vows now in the presence of all the people, in the court of the Lord's house, in the midst of thee, O Jerusalem! Praise ye the Lord!'"*

402. Jerusalem is still surrounded by a wall, varying in height from 20 to 60 feet, according to the undulation of the ground. Near the base of this wall, at the foot of Mount Moriah, travellers have noticed some very large bevelled stones, which are supposed to be the remains of the ancient foundation laid by Solomon.

403. This wall runs across the northern part of Mount Zion, which is now, for the most part, a neglected waste.

404. "On its summit, at some hundred paces from Jerusalem, stands a mosque, and a group of Turkish edifices, not unlike a European hamlet, crowned with its church and steeple. This is Sion! the palace, the tomb of David! the seat of his inspiration and of his joys, of his life and his repose! A spot doubly sacred to me, who have so often felt my heart touched, and my thoughts rapt by the sweet singer of Israel! the first poet of sentiment! the king of lyrics! Never have human fibres vibrated to harmonies so deep, so penetrating, so solemn. Never has the imagination of poet been set so high, never has its expression been so true. Never has the soul of man expanded itself before man, and before God, in tones and sentiments so tender, so sympathetic, and so heart-felt!"†

405. The same traveller forcibly describes the profound oblivion into which the proud structures of this renowned city have sunk:—

406. "Some pools, and the tombs of her kings, are the only memorials Jerusalem retains of her past eventful story: a

few sites alone can be recognised ; as that of the Temple, indicated by its terraces, and now bearing the large magnificent mosque of Omar-el-Sakara : Mount Sion, occupied by the Armenian convent, and the tomb of David ; and it is only with history in one's hand, and with a doubting eye, that the greater part of these can be assigned with any degree of precision.

407. " Except the terraced walls in the valley of Jehoshaphat, no stone bears its date in its form or colour : all is in ashes, or all is modern. The mind wanders in uncertainty over the horizon of the city, not knowing where to rest ; but the city itself, designated by the circumscribed hill on which it stood, by the different valleys which encircled it, and especially by the deep valley of Cedron, is a monument which no eye can mistake.

408. " There truly, was Sion seated ; a singular and unfortunate site for the capital of a great nation : it is rather the natural fortress of a small people, driven from the earth, and taking refuge with their God and their temple on a soil that none could have interest in disputing with them ; on rocks which no road can render accessible ; amidst valleys destitute of water, in a rough and sterile climate ; its only prospect, mountains calcined by the internal fire of volcanos—the mountains of Arabia and Jericho, and an infectious lake without shore or navigation—the Dead Sea. Such is Judea ! Such the site of a people whose destiny it has been to be proscribed in almost all periods of their history, and with whom the nations have disputed even their capital, thrown, like an eagle's nest, on the summit of a group of mountains ; yet this people was the chosen depository of the great truth of the Divine Unity, a truth, the inherent importance of which was itself sufficient to distinguish them from all other people, and to make them proud of their proscriptions, and confident in their doctrines of Providence."

409. All travellers agree in their representations of the overpowering impression produced by the first view of the Holy City, so singular in situation, so striking in

410. The gloomy silence and solitude of this devoted city, in entire harmony with the stern and awful scenery around, are forcibly sketched by the same hand:—

411. “No noise arises from her squares and streets, no roads lead to her gates from the east or from the west, from the north or from the south, except a few paths, winding among the rocks, on which you meet only half-naked Arabs, some camel-drivers from Damascus, or women from Bethlehem or Jericho, carrying on their head a basket of raisins from Engaddi, or a cage of doves, to be sold on the morrow under the terebinthuses beyond the city gates.

412. “No one passed in or out; no mendicant even was seated against her kerb-stones; no sentinel showed himself at her threshold; we saw, indeed, no living object, heard no living sound; we found the same void, the same silence, at the entrance of a city containing thirty thousand souls, during the twelve hours of the day, as we should have expected before the entombed gates of Pompeii or Herculaneum.”

Obs. Our limits forbid us to pursue in detail either the topography or the history of the city of David. These are fully given in the invaluable “Researches” of Dr. Robinson.

413. Acre is a very strong fortress, considered the bulwark of Syria, and famous for its gallant resistance to Napoleon: but it quickly yielded to the attack of a British fleet. Jaffa (the ancient Joppa), and Nabulus near the ancient Samaria, are still places of consequence. Bethlehem, Nazareth, Jericho, are villages visited on account of their connexion with events in the life of our Saviour.

414. ARMENIA, including Diarbekir and Kurdistan, is a high mountain territory, on the upper course of the Euphrates and Tigris, great part of which is held by independent and plundering tribes, or is disputed by Persia, on which it borders. The chief cities are Erzeroum, Diarbekir, and Mosul, near which last are the remains of the ancient Nineveh.

415. IRAK-ARABI, the plain between the Euphrates and

lon, and afterwards of the caliphate of Bagdad; but since it was subjected to Turkish dominion, it has lost its greatness. Bagdad is still a considerable city, at some distance from which are vast piles of bricks and rubbish, the remains of the ancient Babylon. The foreign trade is carried on from Bassora at the head of the Persian Gulf.

416. The chief islands are Cyprus, Rhodes, Scio, Samos, Cos, or Stanco, and Mitylene. These islands, famous in ancient history, are rich and beautiful, mostly inhabited by Greeks, who have suffered severely from Turkish oppression. Having lately made an attempt to shake off the yoke, they were overpowered, and exposed to the most cruel ravages.

ARABIA.

417. ARABIA is an extensive peninsula, great part of which consists of sandy deserts. On its coasts are some flourishing towns; but the people of the interior are mostly wanderers and robbers, like their forefathers described in Holy Writ. The climate is, in many parts, hot and dry, and subject to pestilential winds. In some districts the soil is fertile, and the air salubrious. In the great deserts, travellers guide themselves by the stars and the compass as mariners do at sea.

Obs. In the seventh century, the successors of Mahomet spread their conquests from Arabia over great portions of Asia and Africa. Within the last fifty years great changes were produced in the religion of Arabia, by *Abdul Wahab*, whose numerous followers are called *Wahabees*; they obtained possession of the cities of Mecca and Medina, but were driven out and nearly crushed by the Pasha of Egypt, who, however, has been obliged to yield the territory to the Porte.

418. Arabia is generally divided into three parts; the Stony, the Desert, and the Happy; but these divisions are very imperfect, and the following are the principal recognised in the country itself:—1. Hedjaz; 2. Yemen; 3. Omaun; 4. Nedjed.

419. Hedjaz is a territory in general rude and rocky, though it contains some well-inhabited valleys. The chief places are Mecca, the birth-place of the prophet Mahomet.

Obs. 1. Medina boasts of a stately mosque, supported on 400 pillars, and furnished with 300 silver lamps, which are kept continually burning. Mahomet's coffin is covered with cloth of gold, under a canopy of silver tissue.

2. Mecca, situated in a barren valley, is supported chiefly by the annual resort of many thousand pilgrims; its prosperity greatly declined during the power of the Wahabees, who long held possession of it, and deterred pilgrims from resorting thither; but, since they were driven out by the Pasha of Egypt, the route to Mecca has again been opened, and its prosperity restored.

420. Between the narrow branches of the northern extremity of the Red Sea, are Mount Sinai and Mount Horeb, on which are several cells or chapels possessed by monks. Here also is the wilderness where the children of Israel, on quitting Egypt, wandered forty years before their entrance into Canaan.

421. Yemen, on the south-western coast, merits the appellation of the Happy Arabia. Its hills, rising from the coast, are covered with fine coffee and other aromatic plants. Sana is the capital, but Mocha and Aden are the chief seats of commerce. The latter has lately been taken possession of by Britain, with a view to Indian steam navigation.

422. Omaun contains a number of sea-ports; among others, the great maritime and commercial state of Muscat. The Imam is very powerful, possessing many sea-ports on the coasts of Persia and Eastern Africa. Ras el Khyma, a great stronghold of pirates, has lately been demolished by the British.

423. Nedjed forms the most interior part of Arabia, where the genuine Arab character most distinctly appears. Rude tracts are here intermixed with green pastoral valleys. Nedjed was the chief seat of the power of the Wahabees, and suffered severely in their downfall. Deraie, its capital, was then laid in ruins.

424. Arabian horses are much esteemed. Camels and dromedaries are the common beasts of burden. The coffee of Arabia is superior to that of all other countries: it and gum are the chief articles of export.

lance, good marksmen, and a brave people, inured to live in tents, and remove from place to place with their flocks and herds. Their dress is a blue shirt, tied about them with a sash or girdle, over which some of them throw a vest of furs. Each encampment is under a scheik, who acts as patriarch of the tribe.

JAPAN.

425. The JAPAN islands form an extensive, rich, populous, and remarkable empire. The largest is Nippon; and the chief towns are, Jeddo, Meaco, the spiritual capital, and Nangasaki.

426. This empire till lately prohibited all foreign intercourse except with the Chinese. But several of its ports are now open by treaty to the commerce of Britain and other nations.

427. The religion of the Japanese is idolatrous. The government is absolute, and was originally administered by a spiritual potentate, named the Dairi; but another officer, named the Cubo, who acted as general, has usurped the entire authority, and only allows the other a revenue, with which he resides in empty pomp at Meaco.

Obs. The Japanese language is so peculiar, that it is rarely understood by the people of other nations. The sciences are deservedly esteemed among the Japanese, who have schools for rhetoric, arithmetic, poetry, history, astronomy, &c., attended by no fewer than from 3000 to 4000 scholars each.

428. Jeddo, the capital, and residence of the military ruler, is a very splendid city, with a spacious palace and mansions of the nobles, who are obliged to reside there for half the year. Meaco, inhabited by the Dairi, is not so large or rich, but considered more elegant, and contains nearly 4000 temples. The population of the whole empire has been stated at thirty millions, but may be estimated, with greater probability, at twenty millions. The arts and sciences are much cultivated. Their rich lattered cabinets prove the superior ingenuity of the people. In other respects their manufactures are inferior to those of China.

429. The climate is fine, the face of the country beau-

respects Japan is a great and interesting empire; but, holding no intercourse, it is little known to foreign nations.

Obs. Other islands of Asia are, *Jesso*, to which Europeans trade for furs, and which is partly subject to Japan; *Macao*, lying in the Bay of Canton, belonging to the Portuguese; and the island of *Saghalien*, or *Tchoka*, belonging to Chinese Tartary.

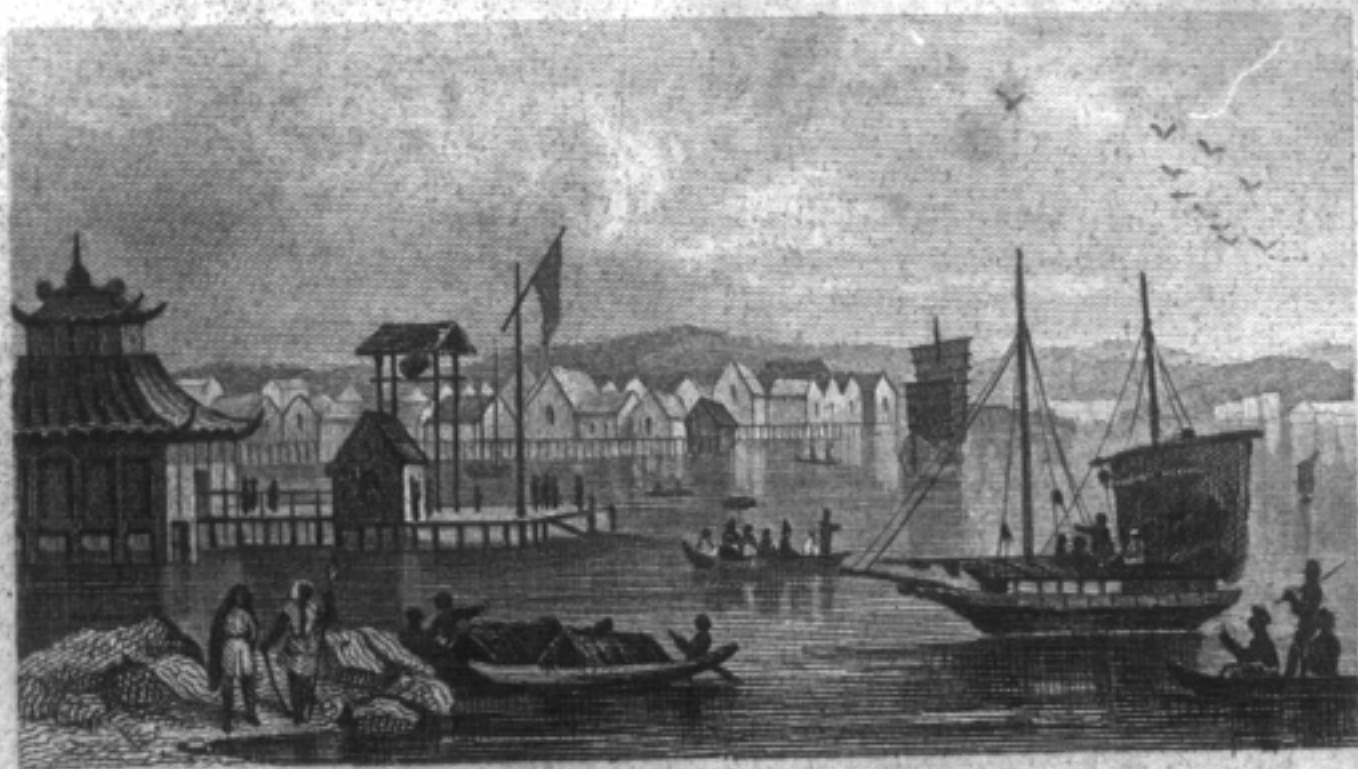
THE ORIENTAL ARCHIPELAGO.

430. This archipelago consists of a range of large islands, lying to the south of India beyond the Ganges, and of China. Though immediately beneath the equator, these islands are well watered by numerous streams, descending from high mountains in the interior: hence the plains are generally very fruitful, though rudely cultivated. They produce the finest spices in the world, and abound in rice, sago, and teak timber. The natives are divided into the brown or Malay race, who are imperfectly civilised, and the Papuas, or oriental negroes, who are almost complete savages. The Dutch are nearly entire masters of this archipelago, with the exception of the Philippines, which belong to Spain.

431. The following are the chief islands and groups of this archipelago:—

(1.) *Java*, the richest and most populous, contains eleven millions of people. It has noble forests of teak: coffee, sugar, rice, and pepper are raised with great success. The exports amount to upwards of three millions. Batavia, on its northern coast, is the capital of the Dutch settlements, and the centre of their trade.

(2.) *Sumatra* is a large, but less productive, island. Its inhabitants, however, are spirited, warlike, and enterprising. Acheen, Siak, and Menangkabao, are the chief native states. The principal Dutch settlements are at Padang and Bencoolen, the last formerly British. The most noted productions of Sumatra are camphor and pepper. In its vicinity, the little island of Banca contains inexhaustible mines of tin.



BRUNI. (BORNEO PROPER)



NATIVES OF NEW ZEALAND. INTERIOR OF A PA.



SYDNEY.

island in the world, except New Holland, but very uncultivated, and the people almost in a savage state; yet it contains valuable mines of gold and diamonds, the former of which are worked by Chinese settlers. On the north-west coast is the territory of Sarawak, and its capital Sarawak with a population of 12,000 is under the government of Sir James Brooke, who first visited the island in 1839, and has since been actively engaged in the suppression of piracy, the administration of justice, and the encouragement of commerce and manufactures. Off the north coast of Borneo is the island of Labuan now belonging to Britain. Celebes is a smaller island, but more populous, and several of its tribes display a very active commercial spirit.

(4.) *The Moluccas and Bandas*, celebrated under the name of the Spice Islands. These are the native country of the finest of spices, the nutmeg and clove, which have never been cultivated elsewhere with equal success. The Bandas, which produce the nutmeg, are a very small group; the chief of the Moluccas are Gilolo, Ceram, Ternate, Tidore, and Amboyna, to which ~~last~~ the culture of the clove has been studiously confined by the Dutch, who have exercised, in regard to these articles, a rigid monopoly, which has much limited their own trade in them.

(5.) *The Philippines*, of which the chief are Luzon and Mindanao, form a large and fertile group, which the Spaniards have occupied, but not very actively improved. They carry on, however, a considerable trade from Manilla, the capital, which is a large city.

(6.) The islands are of volcanic formation, and contain a chain of active volcanoes. The group is within the range of the monsoons, and violent hurricanes are common. Vegetation is exceedingly luxuriant. Rice, millet, maize, sugar, indigo, hemp, tobacco, coffee, and cotton, are raised; and sago, cocoa-nuts, bananas, cinnamon, numerous fine fruits, and timber for shipping, are among the products. The chief manufacture carried on is that of "government Manilla" cigars, which employs 20,000 hands at a royal factory in Manilla.

AFRICA.

GENERAL DESCRIPTION.

PHYSICAL GEOGRAPHY.

432. *Astronomical Position, Extent, Boundaries.* — This continent, which has the form of a vast peninsula, is situated between $37^{\circ} 20'$ N. and $34^{\circ} 50'$ S. latitude, and between $17^{\circ} 32'$ W. and $51^{\circ} 22'$ E. longitude. Its greatest length from Ras-el-Kran to Cape Agulhas is about 5,000 miles; its greatest breadth from Cape Verde to Cape Guardafui is 4,618 miles. Its superficial area is about 12 millions of square miles.

433. It is bounded on the north by the Straits of Gibraltar and the Mediterranean, which separates it from Europe; on the east, by the Isthmus of Suez, Red Sea, and Indian Ocean, separating it from Asia; on the south by the Southern, and on the west by the Atlantic Ocean.

434. *General Aspect.* — This continent is a solid mass of land, its coast-line being in no part broken into large peninsulas, islands, bays, or gulfs. About one third of the continent lying to the north of the twelfth parallel consists of a vast plain of moderate elevation. The Atlas range of mountains bounds this plain on the north. To the south of the twelfth parallel, the continent is supposed to be occupied by a table-land of considerable elevation. Unlike the other great divisions of the globe, Africa is almost without water communication.

435. *Seas, Gulfs, &c.* — The Red Sea or Arabian Gulf (which includes the two smaller gulfs of Suez and Akaba); and the Gulf of Aden, to the eastward of the Red Sea. Sofala Bay and Delagoa Bay, both on the south-east of Africa. Algoa Bay, False Bay, Simon's Bay, Table Bay, and St. Helena Bay, all on the south. The Gulf of Guinea on the west; and the Gulf of Sidra on the north.

zambique Channel, between the island of Madagascar and the continent; and the Straits of Gibraltar.

437. *Capes*. — On the north are Capes Bon, Ceuta, and Spartel; on the west, Capes Bojador, Blanco, Verde, Palmas, Three Points, Formosa, Negro, and Frio. In the south, the Cape of Good Hope, and Cape Agulhas; on the east, Cape Delgado, and Cape Guardafui.

438. *Islands*. — Upon the east side of Africa are Socotra, the Seychelle Islands, the Comoro Islands, Madagascar, Mauritius, and Bourbon — all situated in the Indian Ocean. In the Atlantic Ocean, upon the west side of the continent, are Tristan d'Acunha, St. Helena, and Ascension; with Fernando Po, Princes Island, St. Thomas, and Annobon (all four lying in the Gulf of Guinea); the Cape Verde Islands, the Canary Islands, and Madeira.

439. *Mountains*. — The *Atlas* range skirts the northern shores of Africa, along the coast of the Mediterranean and part of the Atlantic: its western portion, towards the Atlantic, is distinguished as the Great Atlas. A range of mountains extends across the central parts of the continent, from about the meridian of 10° W. longitude on the one side, to the neighbourhood of Cape Guardafui on the other: the western part of this bears the name of the *Kong Mountains*; the central part is little known, but it is called by the Arabs *Jebel-el-Kumri* (or the *Mountains of the Moon*); the eastern part forms the *Mountains of Abyssinia*, the highest of which are nearly 16,000 feet in elevation.

440. Chains of mountains extend along both the western and eastern coasts of Africa, to the southward of the equator. Upon the eastern side of the continent (in about 4° S. lat.) has been recently discovered the high summit of *Kilimandjaro*, which is covered with perpetual snow, and is probably 20,000 feet in height: near it is another, and still higher, peak, called *Mt. Kenia*. Further south, along the south-eastern coasts, are the *Mountains of Lupata*. Near the southern extremity of Africa is the range of the *Nieuw-veld Mountains*, the highest portions of which (to the eastward) are called the *Compass-berg* and the *Sneeu-berg*. The Table Mountain and some adjoining heights form a detached group, near the Cape of Good Hope.

Between the Nile and the Red Sea there are some ranges of considerable elevation.

441. *Table-lands*. — The interior of Southern Africa is believed to form a table-land, probably in some parts of considerable height. But the unbroken character of the coast-line, and the unhealthiness of those tracts which lie adjacent to the shores of tropical Africa, render it ex-

land rises in a succession of terraces from the ocean towards the central mass. The first terrace on the south is called the Long Kloof, and the second the Great Karoo.

442. *Volcanoes.*—These seem to be confined to the islands: the only one of importance is that of Teneriffe.

443. *Plains.*—The great plain which stretches from the Atlas Mountains, southward to the Mountains of Kong and the southern table-land, contains two different countries, the sterile and the fertile, the former called the Sahara, and the latter Soudan.

444. *Valleys.*—The valley of the Nile is the only one of note in this continent.

445. *Deserts.*—The Egyptian Desert stretches along the north-west shores of the Red Sea, and to the south of this extends the Nubian Desert: the Libyan Desert lies between the last-mentioned desert and the great Sahara.

446. The Sahara, or sea of sand, covers perhaps nine-tenths of the whole plain. On the west of the meridian of Greenwich, it extends from the foot of the Kong Mountains (15° N. latitude) to that of Mount Atlas (about 30°), occupying the whole width of the plain, which is here 1,000 miles across.

447. But its breadth is no where less than 750 miles. It is divided into two parts by a tract of stony country, by which it is traversed from north to south between 13° and 15° E. longitude, and which in parts offers some cultivable land, while in others the stony surface is covered with sand. By following this stony tract Messrs. Denham and Clapperton, who set out from Tripoli, succeeded in reaching Soudan, and more recently Dr. Barth has explored the waters of lake Tchad, and even succeeded in penetrating to Timbuctoo. That portion of the desert which extends between this tract and the Atlantic Ocean is called Sahal, and is almost entirely covered with a fine sand. Low hills and wells occur in a few places, and water in many parts.

448. All the western part of the Sahara would, owing to its burning heat and the want of water, be totally impassable were it not that it is here and there intersected

with oases. These are mostly of very limited dimensions. They are usually surrounded by higher land, which serves to account for the springs, and consequently the verdure, for which they are celebrated.

449. *Rivers.*—The longest river of Africa is the Nile, which flows into the Mediterranean Sea. The source of its principal branch (distinguished as the White Nile) has been recently (1862) explored by Speke and Grant. The great river, so long an object of curiosity (and even of mystery), is found to issue from lake Nyanza, an extensive body of inland water, lying immediately south of the equator. The other branch of the river, called the Blue Nile, rises in the mountains of Abyssinia.

450. The other principal rivers are the Senegal, Gambia, Quorra (or Niger), the Benuwé, which flows into the former, Zaire or Congo, Coanza, and Orange River, on the west, and the Zambesi on the east coast.

451. *Lakes.*—Amongst these are Lake Tchad, in the central part of the continent; Lake Dibbie, through which the Quorra flows, and Lake Dembea or Tzana, in Abyssinia; together with Nyanza, Tanganyika, Shirwa, Nyinyesi, and N'gami; to the south of the equator. Lake Nyanza appears to rival in magnitude the largest fresh-water lakes on the globe.

452. *Soil.*—Where well watered, the soil of Africa is very productive, as in the regions of the Nile, the Senegal, the Quorra, and other river-valleys.

453. *Climate.*—The climate of Africa is hot and dry; and nearly every part of this continent is hotter than other parts of the globe in similar latitudes. The year is divided into the dry and the rainy seasons; on the coasts within the tropics a great deal of rain falls, but in the Sahara or Great Desert, and also over a part of southern Africa, there is scarcely any rain.

454. *Minerals.*—Central Africa, and also the eastern and western coasts, produce gold in great abundance. Silver, iron, and lead, occur in most of the mountainous districts, and salt is an abundant production of the Sahara.

455. Silver, copper, and lead, are found in moderate quantities. Iron is generally diffused throughout the continent. Salt also is plentiful.

456. *Vegetation.*—As regards vegetation, Africa may be divided into three regions,—the Atlantic, the Equinoctial, and the Austral. In the first region, along the shores of the Mediterranean, wheat, barley, maize, rice, the grape, the fig, olive, and the date come to perfection. In Egypt the *acacias* yield gum arabic, and the *cassias* the medicinal *senna*. In *Abyssinia* the coffee-tree grows wild:—this is supposed to be its native country.

457. In the Equinoctial region there are forest trees of great size, the most remarkable of which is the baobab, the largest species of trees in the world; and the age of some specimens has been estimated to be nearly 6,000 years. The African teak and sak are found in this region.

458. The Austral region has a different form of vegetation: there are endless varieties of heaths, some of which are of great beauty.

459. In various parts of the continent the banana, the orange, lime, and lemon, the tamarind, cocoa-nut, cotton, and sugar-cane flourish, and also maize, tobacco, mandioc, and pine-apple, which have been introduced from America.

460. *Animals.*—These are more numerous than in any of the other great divisions of the globe. In the northern and central regions are found lions, panthers, jackalls, gazelles, and antelopes. The one-humped or Arabian camel is abundant in the north. Everywhere the antelopes are plentiful.

461. To the south of the Sahara are found the elephant, the two-horned rhinoceros, the giraffe, and the hippopotamus. Monkeys of various species are numerous within the tropics.

462. South of the tropic of Capricorn are the elephant, buffalo, numerous species of the antelope, the zebra, the quagga, the engallo, and the wild boar.

463. The birds of northern Africa resemble those of Europe and Asia. The ostrich inhabits the central and

regions. In the equinoctial regions, parrots and parroquets, and birds of most beautiful plumage are innumerable. Rapacious birds, as large carrion vultures, griffons, chincows, oricows, kites, sparrow-hawks, vultures, bats, buzzards, and falcons, are generally diffused throughout the continent. Crows, guinea-fowl, grouse, and partridges are abundant.

464. The rivers and lakes are frequented by the virgin, and Balearic cranes, the rose-coloured flamingo, the pelican, and a great variety of waterfowl.

465. Among reptiles are to be found a great variety of the lizard family, from the chameleon up to the crocodile: many of them are noxious, as boa constrictors, the scorpion, &c. There are also almost every species of noxious reptiles, enormous spiders, termites or white ants, and locusts.

466. *Fishes.* — In the tropical seas, sharks and dolphins are numerous. In southern Africa fish is extremely abundant, and of every kind. During the winter season, whales, porpoises, sharks, and seals frequent various parts of the coast.

467. *Races of Men.* — The varieties of the human family occupying this portion of the globe are not only much greater than those found in Europe, but the difference in colour, form, and stature are much wider. There are about seven varieties, — viz. the Negro, the Nubian, Numidian, Egyptian, Abyssinian, Hottentot, and Kaffre.

468. It is only the central or equinoctial regions that are inhabited by the numerous races and varieties of the black-coloured, woolly-headed people, which are classed by naturalists as the Ethiopic or black race, or negroes properly so called.

POLITICAL DIVISIONS.

469. Africa has been divided variously, as one standard or another has been adopted, but the barbarism of the people, and our imperfect knowledge of them, render it

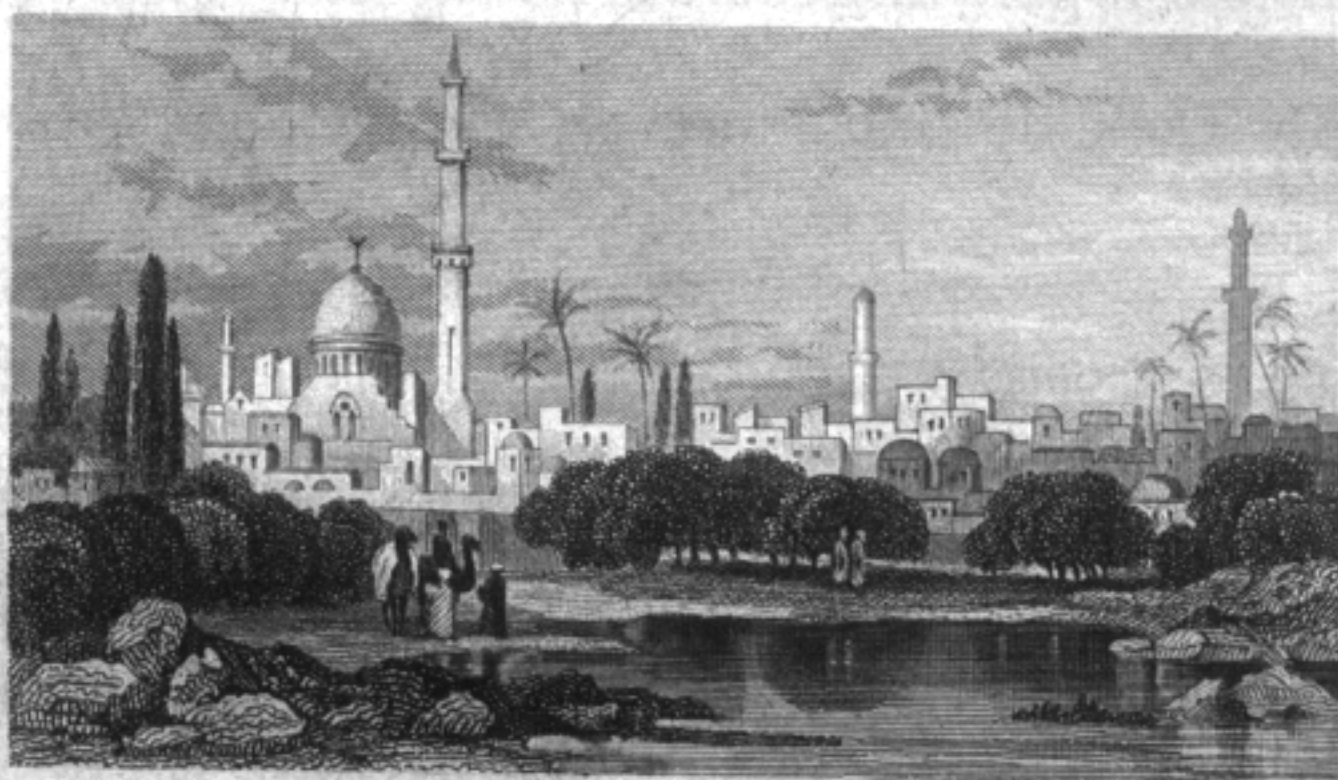
impossible to give an accurate arrangement of the political divisions.

470. The following, however, will be found to be pretty correct.

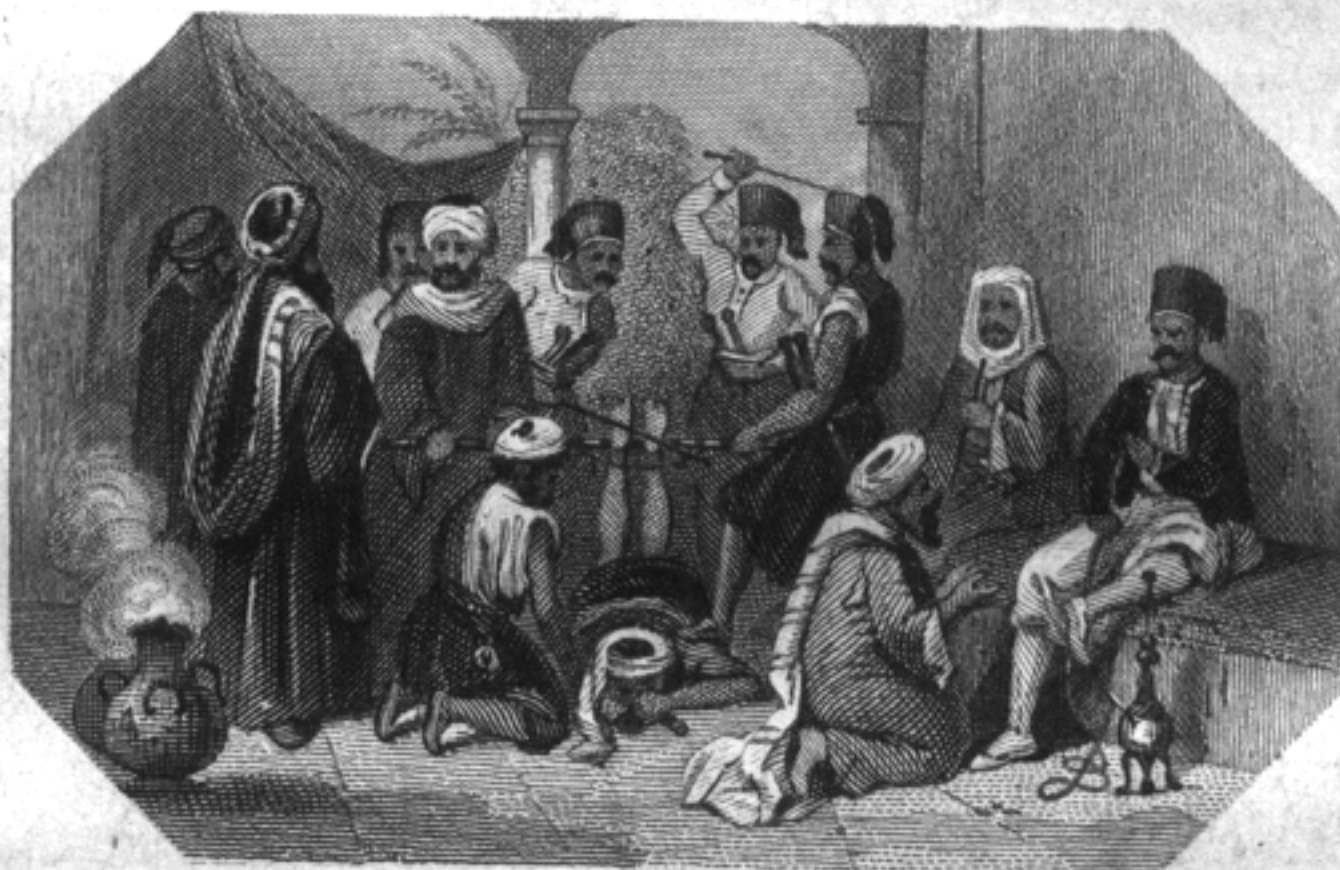
States.	Capital and Chief Towns.	Population.
Egypt - - - - -	Cairo and Alexandria	5,000,000
Barbary States - - - - -		
Tripoli - - - - -	Tripoli - - - - -	500,000
Tunis - - - - -	Tunis - - - - -	2,500,000
Algiers - - - - -	Algiers - - - - -	2,500,000
Morocco - - - - -	Morocco - - - - -	6,000,000
Abyssinia - - - - -	Gondar - - - - -	3,000,000
Nubia - - - - -	Sennaar - - - - -	2,000,000
Bornou, &c. - - - - -	Bornou - - - - -	5,000,000
Houssa - - - - -	Soccatoo - - - - -	6,000,000
Darfur - - - - -	Cobbe - - - - -	250,000
States on Niger - - - - -	Timbuctoo - - - - -	20,000,000
Dahomey - - - - -	Abomey - - - - -	2,000,000
Ashantee - - - - -	Coomassie - - - - -	4,000,000
Western Coast - - - - -	Benin, &c. - - - - -	20,000,000
Eastern Coast - - - - -	Mozambique - - - - -	10,000,000
Southern Coast or Cape Colony	Cape Town - - - - -	267,000
Natal - - - - -	Pietermaritzburgh	160,000

471. EGYPT consists of a narrow valley along the Nile, bounded on each side by ridges of rocky hills. It is divided into Upper, Middle, and Lower, which last is formed into a delta, by the lower branches of the Nile, and is exceedingly fertile. If not the parent, Egypt was, in early times, the nurse of arts and letters. Its temples, pyramids, and tombs, the monuments of its ancient grandeur, are of stupendous magnitude, surpassing those of any other country. Many of the walls are entirely covered with sculptures, paintings, and hieroglyphics.

Obs. The sculptured statues are so large, that figures thirty, forty, or sixty feet high are not uncommon, and many busts weigh many tons. The paintings represent all the arts and employments. The hieroglyphics represent the history and circumstances, but till lately they were



CAIRO. FROM THE SOUTH.



EGYPTIANS. THE BASTINADO.



ALGIERS.

unintelligible, and the study of them has thrown much new light on ancient history.

472. The pyramids near Cairo are always ranked as wonders of the world. They were tombs of certain kings or Pharaohs, built about 2500 B.C. The largest is 460 feet high, and covers 11 acres at its base; the second is 428.

473. Egypt sunk into great degradation beneath Turkish dominion; but somewhat revived under the late Mohammed Ali. He made extraordinary efforts to restore agriculture and manufactures, re-opened the ancient canals, and studiously introduced the arts and civilisation of Europe. His yoke was, however, oppressive to the people. He conquered Nubia, and was master of Palestine, Syria, and great part of Arabia; but from these he was expelled by the British.

474. Grand Cairo, the capital, is a large and splendid city. The ports are, Alexandria, Rosetta, and Damietta: but the principal ruins are at Thebes and Dendera, in Upper Egypt.

475. BARBARY extends along the Mediterranean, from the Atlantic to Egypt, and includes the Mahometan States of Tripoli, Tunis, Algiers, and the empire of Morocco. It forms a beautiful and fertile region, once flourishing, but long sunk under tyranny and oppression. The most atrocious piracies were carried on from the sea-ports; but these have been suppressed by Britain; and the French have now taken possession of Algiers, the chief seat of these outrages, and are endeavouring to colonise the territory. Constantina and Bona are the chief towns.

476. ABYSSINIA is an extensive country to the south-east of Nubia. It is traversed by high mountains, between which are many fertile valleys. The Abyssinians are a barbarous people, delighting in bloodshed, feeding on raw flesh, and sometimes cutting slices from the living animal. Great part of the country has been overrun by the Galla, a still more savage race, who ride on oxen, and adorn themselves with the entrails of those animals. They are masters of Gondar, the capital, and of the finest

central provinces ; but there is still a native government in the northern province of 'Tigré, and another in the southern districts of Shoa and Efat.

477. NUBIA is a long narrow range of territory extending upwards along the Nile, whose waters fertilise two or three miles on each side, beyond which are extensive deserts. Many of the rocks which rise on the banks are sculptured into spacious temples and pyramids, of which the chief are at Ibsambul and Merawe. The people are rude, lawless, and corrupted by the prevalence of the slave trade. Nubia is divided into a variety of states, of which the chief are Dongola, Merawe, Shendi, and Senaar. The Pasha of Egypt lately conquered all these countries, but holds them by a somewhat precarious tenure. To the south-west of Nubia are Kordofan and Darfur, rude countries, inhabited by a barbarous people. South of Darfur are Donga and other barbarous countries, hitherto but very imperfectly explored.

478. *Central Africa* consists of an extensive region, separated from the countries on the coast by vast forests and deserts, but comprising now the most improved and cultivated tracts of that great continent. The continued range of the Mountains of the Moon, under various names and aspects, crosses it from west to east, and gives rise to the Niger, with its tributaries, and to other great rivers which unite in forming the lake Tchad. The plains are thus well watered, and extremely fruitful, yielding in abundance grain, indigo, and cotton, which is skilfully woven into fine cloth. The inhabitants consist partly of negro nations, who are more industrious and intelligent than in other parts of Africa ; partly of Moors and Felatas, whose ancestors migrated from Egypt and Barbary.

479. This region is divided among many nations, which cannot be here fully described ; but the following are the principal :—

480. 1. BORNOU is an extensive plain, immediately west of the lake Tchad, and watered by the river Yeou. It is fertile, but imperfectly cultivated, and the inhabitants

are uncivilised. They are almost at constant war with the people of Beghermé, a large country to the north-east of the lake. Loggun, on the river Shary, which falls into the Tchad, is a wealthy and industrious country. Mandara is a fine plain at the foot of a vast range of mountains. These nations are negro, yet have been converted to the Mahometan religion, which they profess with bigoted zeal.

481. 2. HOUSSA is a fine and extensive region to the west of Bornou. The Fellatas, who inhabit it, are an industrious and intelligent, as well as warlike, race; and the country being well cultivated, yields in abundance wheat, fruits, vegetables, cotton, and indigo. The sultan of Soccatoo holds at present supreme sway over the states composing Houssa, which were conquered by his predecessor. They are chiefly Kashna, Kano, Zegzeg-oober, and Zamfra. Soccatoc, and Zaria, the capital of Zegzeg, are the largest cities; but Kano is the chief seat of the caravan trade. Numerous slaves, brought from the mountainous country in the south, are here sold to the Barbary merchants. Adamoua and Jacoba are situated beyond the mountains, on the great river Shary, but are little known.

482. *The countries on the lower Niger.* This region is well watered, and, in many places inundated by that river, is extremely fruitful; but, in approaching the sea, they become marshy and unhealthy. The country was explored by Lander, who died on the 27th of January, 1834, in consequence of a musket ball he received in his hip from some barbarous natives. The Niger here rolls a magnificent stream several miles broad, and resembling an inland sea; and it receives the Tshadda, almost as large as itself, flowing from countries unknown. The people in this region are generally negro and pagan; but they have made a greater progress in the arts than the nations on the coast. Youri, with a large and strong capital of the same name, is very populous, yielding large harvests of rice. The people are brave, but the king has incurred just reproach by the

attack which terminated in the death of Park, and by the extortion practised toward Lander. Boussa, Kiama, Wawa, and Niki are also considerable states. Yarriba, having Eyeo for its capital, is a very large and populous kingdom; Nyffe, on the opposite, or eastern side of the Niger, is distinguished for manufacturing industry, its cloths and mats being superior to any other made in Africa. The chief towns are Rabba and Koolfu. Zagoshi, on an island in the Niger, is possessed of numerous barks, with which it carries on an extensive trade. Funda is a great city on the Tshadda: Kirree and Eboe, on the Delta of the Niger, though surrounded by forests and swamps, are enriched by their trade with the coast.

483. The *countries on the upper Niger* are also rich and industrious. Timbuctoo has been long celebrated as the seat of the caravan trade with Morocco for slaves and gold. Bambarra is a fine plain watered by the Niger; and Sego, its capital, is large and flourishing. Jenné, Sansanding, and Walet, are also great seats of inland trade. Almost all the streams which flow from the mountains in the south of this country contain gold, which is extracted by agitation of the cascalho or gravel in water.

The internal trade of Africa is carried on by caravans, or parties of some hundred dealers, who convey their merchandise on droves of camels, and stop at certain protected places, where they establish fairs and make sales and exchanges. Caravans which leave Egypt or Barbary have to pass over extensive deserts, where many perish.

484. On the *Western Coast* of Africa are innumerable tribes of people, and various kingdoms, watered by the rivers Senegal and Gambia, on which are many European forts and settlements; but the climate is, unfortunately, extremely unhealthy, and fatal to Europeans. The French settlements are on the Senegal, with a view to the gum trade.

485. Guinea is divided into the *Grain*, the *Ivory*, and the *Gold* coasts; it formerly supplied Europeans with slaves. Behind the Gold coast are the extensive kingdoms of Ashantee and Dahomey, which have made some

progress in the arts; but they carry on war with dreadful ferocity, and celebrate the death of their kings with thousands of human victims. Gold and ivory are the chief exports from this coast.

486. Benin, Waree, Brass, Bonny, and Calabar are situated on a succession of great estuaries, which form the mouths of the Niger. The country is a dismal swamp, covered with forests; but great quantities of palm oil and many slaves are brought down from the interior. The great river Zaire, with the countries of Loango, Congo, Angola, and Benguela, present the most interesting objects on the more southern coast, and are all peopled with ill-civilised negroes. They contain the Portuguese settlements of Loango and Benguela, whence numerous slaves are conveyed to Brazil.

487. *Sierra Leone* is an English settlement on the west coast of Africa, to the south of the river Gambia. It contains 40,000 inhabitants, who are nearly all negroes: the capital is called *Freetown*.

Upon the coast to the south-eastward of Sierra Leone is the territory of *Liberia*, which is an independent negro republic, founded (in the year 1820) by the people of the United States, as an asylum for such of the black population of that country as had acquired their freedom. It is under the government of a president (of the negro race), and contains 250,000 inhabitants, all negroes: the chief town is called Monrovia.

488. On the *Eastern Coast* of Africa are the Portuguese possessions of Sofala, Quillimane (at the mouth of the river Zambesi), and Mozambique. From the interior of the country the Portuguese traders derive gold-dust, ivory, bees-wax, and slaves. Farther north is the coast of Zanguebar, which is subject to the sultan of Muscat (in Arabia); but this territory has been dreadfully ravaged by the Galla, who have destroyed Melinda, its former capital. The chief places on the coast are now Mombas, Lamoo, and Magadoxa. Near the coast are the islands of Zanzibar, Pemba, and others.

BRITISH COLONIES IN AFRICA.

489. *Cape of Good Hope or Cape Colony.*—This is an important colony of Great Britain, occupying the south part of the peninsula of Africa, between latitude $29^{\circ} 41'$ and $34^{\circ} 51'$ S., and longitude $17^{\circ} 10'$ and $27^{\circ} 32'$ E.; bounded south and east by the Indian, and west by the Atlantic Ocean, north by the countries of the Namaquas, Griquas, and other Hottentot tribes, and north-east by British Kafraria. Length, west to east (Cape peninsula to Keiskamma river), 550 miles; average breadth 250 miles. Area estimated at 200,000 square miles. Population, above 267,000, partly British, with some Dutch, Negroes, Caffres, and a few Hottentots. The country is formed of a series of terraces, rising in successive stages from south to north. The chief mountain-chains are the Drakensteen, Zwellendam, Zwartenberg, and Sneeuw Bergen, in which last is the Spitzkop or Compassberg. The culminating point of the whole is estimated at 10,250 feet. Table Mountain, at the south-west extremity of the colony, is an insulated flat-topped mass, 3,582 feet in height, the south point of which forms the promontory of the Cape of Good Hope, 1000 feet in elevation, in latitude $34^{\circ} 22'$ S., longitude $18^{\circ} 29'$ E.

490. It was discovered by Diaz, a Portuguese admiral, in 1486, and called by him "Cape of Storms." Cape Agulhas, the next remarkable promontory, is the south-most point of Africa, in latitude $34^{\circ} 51'$ S., longitude $20^{\circ} 2'$ E.; it gives its name to an extensive sandbank, and to an important current which flows from the Indian to the Atlantic Ocean. The most extensive plain is the great Karoo, an arid tract upwards of 200 miles in length and 50 miles in breadth, between the Zwarteveld and the Nieuwveld mountains. The only passage from one terrace to another is through the Kloofs, narrow and difficult mountain gorges: some of these have been made passable for wheeled carriages, but the roads are in general very bad. The principal bays are (from west to east) St.

Helena, Table, False (the west part of which forms Simon's bay), St. Sebastian, Mossel, Plettenberg, and Algoa. Streams are numerous, but rapid, mostly dry in summer, and unfit for navigation; the chief are, on the east and south coast, Keiskamma, Great Fish, Bushman, Sunday, Camtoos, and Breede; on the west, Berg and Elephant or Oliphant; and on the north, several small streams tributary to the Orange. Climate mild and healthy, but very dry; rains irregular, often falling in torrents on the coast, but rare in the plains of the interior. Snow falls only in the mountains, and is not permanent, even on the most elevated.

491. December and January are the warmest, and June and July the coldest, months. Mean temperature at Cape Town, in summer $58^{\circ} 3'$, in winter $76^{\circ} 6'$ Fahr. The greater number of diseases are unknown at the Cape: the most common are consumption and apoplexy. Few of the inhabitants attain an advanced age. Soil is fertile where sufficiently watered, but the general appearance of the country is sterile and monotonous. The arid steppes or Karoos of the interior are destitute of trees, and are covered with an ephemeral vegetation only after heavy rains. The flora of the colony is of a peculiar character, and is calculated to comprise 1200 species, which, however, are more remarkable for the variety and beauty of their flowers than for their uses. The most valuable is the aloe, the produce of which has been exported in one year to the amount of 2794*l*. A species of soda, found in the Karoo, is employed by the inhabitants in the manufacture of soap, and candles are made from the covering of the wax berry. European grains and the fruits of temperate and tropical regions have been successfully introduced. Corn is raised more than requisite for consumption, and the cultivation of the vine is an important source of wealth: a good white wine is produced in the interior, but only the small vineyard at the foot of Table Mountain produces the celebrated liqueur called Constantia. Cattle rearing is the chief

sheep has rendered the rural trade of the colony important. The coast abounds with mackerel and herrings, and in 1842 the whale and seal fishery employed 144 boats. Some of the wild animals of Africa are still to be met with, but the larger species decrease in proportion as colonisation extends. The lion, hyena, buffalo, hippopotamus, and zebra are occasionally seen; the rhinoceros is rare, and the elephant is driven beyond the boundary. The ostrich and eagle are found in the mountains, and snakes are numerous. The commerce of the colony is extensive. The ports are Cape Town and Simon's Town in the west, and Fort Elizabeth in the east. The colony consists of an east and a west province, and these are divided into districts, amongst which are, Cape Division and Stellenbosch in the south-west; Zwellendam, George, Uitenhage, and Albany on the south coast; Clanwilliam on the north-west; Worcester, and Beaufort, Graaf Rynet, and Somerset in the interior; Colesberg on the north-east; Cradock and Victoria on the east. The capitals have the same names as the districts, except Graham's Town, which is the capital of Albany, and Fredericksburg of Victoria district. Stellenbosch is the chief wine, and Zwellendam the principal corn growing districts; the others are mostly appropriated to grazing. The government is vested in a governor appointed by the British Crown, with a representative legislature, elected by the colonists. The eastern division of the colony is under a lieutenant-governor. *British Caffraria*, a small frontier-province, adjoins the eastern border of the colony. The chief place within its limits is King William's Town. The Dutch first planted a settlement at the Cape of Good Hope in 1648; this was taken by the British in 1795, and, though subsequently restored for a time, became permanently British in 1814. Many of the Dutch settlers have since passed into the more distant interior, beyond the limits of the colony.

492. *Natal* is a colonial possession of Great Britain, on the south-east coast of Africa, between latitude 27°

having south-east the Indian Ocean, west the Drakenberg or Kathlamba Mountains, north-east the Buffalo and Tugela rivers, dividing it from the Zooloo country. Estimated area 22,000 square miles. Population 160,000. Surface is undulating, well watered, and mostly covered with tall grass. Timber in the interior grows only in clumps, but the sea-coast is bordered by a belt of mangroves. The climate, though approaching a tropical character, is healthy, and the soil fertile. Cotton and indigo grow wild, and the former has been produced for exportation, of the finest quality. Sugar, coffee, wheat, oats, beans, and tobacco, are important crops. Superior coal has been found in the interior; building stone is found all over its surface; and iron ore is abundant. Sugar, arrow-root, coffee, and cotton, are amongst the chief exports. The territory, which is a dependency of the Cape of Good Hope, is administered by a lieutenant-governor. Pietermaritzburg, the capital, is fifty miles inland from Port Natal, which is near the centre of the coast-line. Durban, on Port Natal, is the shipping-port of the province.

AFRICAN ISLANDS.

493. The island of *Madagascar* is one of the largest in the world, being 850 miles in length, and 250 in breadth. It is a very fertile country; but the inhabitants, divided into numerous tribes, are in general barbarous. Radama, a former king of the island, concluded a treaty for the abolition of the slave trade with the English government, and made great efforts for the improvement of the island. These efforts, interrupted by his premature death, have recently been renewed. Off the coast of Madagascar is the French Island Bourbon, and to the eastward of that is the Mauritius, or Isle of France, now belonging to Great Britain. Off the west coast of Africa is the rocky isle of St. Helena, an English colony and a desirable port, famous as having been the residence of

of St. Helena, is a small barren isle; it has a safe and commodious harbour, and abounds with fine turtle. The English have an establishment on this lonely isle. The Cape Verde islands, ten in number, of which the chief are St. Jago and St. Antonio, belong to the Portuguese, and produce a valuable breed of asses.

494. The *Canary*, called anciently the *Fortunate Islands*, are a fine group, more to the north. The chief are the Grand Canary and Teneriffe, in which is the famous Peak, two miles and a half in perpendicular height. Madeira, still farther north, is famous for its wine and its healthful climate.

AMERICA.

GENERAL DESCRIPTION.

PHYSICAL GEOGRAPHY.

495. *Astronomical Position, Extent, Boundaries.* — This continent is situated between 35° and 170° W. long. and 72° N. and 56° S. lat. Its greatest length, from Point Beechy on the Arctic Ocean to Cape Horn on the south, is about 9,000 miles. The greatest breadth of North America, along the parallel of 51° N. lat. is about 3,250 miles; and of South America, along the parallel of 5° S. lat. about 3,200 miles. The area of North America is about $8\frac{1}{2}$ millions of square miles, and of South America about 7. The area of the West India Islands and other islands along the coast is about 150,000 square miles. The Arctic Polar Ocean washes the northern shores, the Atlantic Ocean the eastern and south-eastern, the Pacific Ocean, the western and south-western, and the southern extremity terminates in a point in the Southern Ocean. This vast continent was unknown to the



inhabitants of the Old World till 11th October, 1492, when it was discovered by Christoval Colon (latinised *Columbus*), in an attempt which he made to sail in that direction to the East Indies. The first land he descried was Guanahani, or Cat Island, one of the Bahamas. In subsequent voyages, he explored the islands since called the West Indies, and visited the mainland of South America. Other voyagers discovered other regions, the most valuable of which have been colonised by Europeans, who have driven out or subdued the original inhabitants. America is so named from Amerigo Vespucci, a Florentine, one of the early discoverers.

496. *General Aspect.*—Under this head we shall consider the configuration of the surface of both North and South America. Upon referring to the map we observe that between these there is a striking resemblance. Both are of a triangular shape, and each contracts as it advances towards the south. Each has a lofty ridge of mountains abounding in volcanoes stretching along its western coast, and each has a great central plain watered by the most magnificent rivers upon the surface of the globe. The surface of each may be divided into five physical regions, as follows:—

497. *North America.*—1. The maritime regions, forming the eastern slopes of the Allegany Mountains, and extending along the shores of the Atlantic. 2. The great northern plain beyond the 50th parallel, which is spread over with immense lakes, and resembles the Siberian plain in surface and the nature of its climate. 3. The great valley of the Missouri and Mississippi, which extends from 46° N. lat. to the Gulf of Mexico on the south, and from the Allegany or Appalachian on the east, to the Rocky Mountains on the west. 4. The elevated and maritime regions westward of the Oregon or Rocky Mountains. 5. The elevated table-land of Central America, lying between the Gulf of Mexico and the Caribbean Sea on the east and the Pacific Ocean on the west.

498. *South America.*—1. The basin of the Orinoco.

branches. 2. The basin of the Amazon, which is covered with dense forests. 3. The great southern plain, through which flow the Rio de la Plata and its tributaries. 4. The Brazilian table-land, which lies to the east of the Parana and Araguaya. 5. The western slopes of the Andes, and the low country between this chain and the Pacific Ocean: this region may be again subdivided into two climates, one to the north, the other to the south, of Lake Titicaca.

499. *Seas, Gulfs, &c.* — Upon the north coast of America, belonging to the Arctic Ocean, are the Gulf of Boothia, Coronation Gulf, and many smaller inlets. On the east side, and forming portions of the Atlantic Ocean, are the large inlets of Baffin's Bay, Hudson's Bay, the Gulf of St. Lawrence, the Bay of Fundy, the Gulf of Mexico, and the Caribbean Sea, the latter of which includes the smaller gulfs of Honduras, Darien, and Venezuela. Upon the west coast are the Gulfs of Guayaquil, Panama, and California, which belong to the Pacific Ocean; and in the north-west are Cook's Inlet, Bristol Bay, and Norton Sound, on the coast of the Pacific, with Kotzebue Sound, on the coast of the Arctic Ocean. There are numerous smaller inlets on various parts of the coast, the names of which may be found on the map.

500. *Straits and Channels.* — The channels of *Lancaster Sound* and *Barrow's Straits* connect Baffin's Bay with the Arctic Ocean, and *Prince Regent's Inlet* leads from Barrow's Strait into the Gulf of Boothia. *Davis's Straits* form the entrance to Baffin's Bay: *Hudson's Straits* lead from the Atlantic into Hudson's Bay. The *Straits of Belle Isle* divide the island of Newfoundland from the mainland. The *Channel of Florida* forms one of the many entrances to the Gulf of Mexico. The *Straits of Magellan* separate the southern extremity of America from the archipelago of Tierra del Fuego: the *Straits of Le Maire* flow between Staten Island and the eastern point of Tierra del Fuego. *Behring's Straits* lie between

501. *Capes*.—The principal headlands are Icy Cape, Cape Barrow, Point Beechey, and Cape Bathurst, on the north coast: Capes Farewell, Charles, Cod, Hatteras, Sable, Catoche, and Gracias-à-Dios, on the east side of North America; Capes St. Roque, Frio, and Corrientes, on the east coast of South America. In the south is Cape Horn: on the west are Cape Parina, in South America, and Capes St. Lucas, Mendocino, and Prince of Wales, in the northern half of the continent.

* 502. *Peninsulas*.—On the north side of America are the peninsula of Boothia, and Melville Peninsula: on the east, the peninsulas of Labrador, Nova Scotia, Florida, and Yucatan: on the west, the peninsulas of Lower California and Aliaska. The whole of South America is, in reality, a vast peninsula.

503. The *Isthmus of Panama*, which connects North and South America, is only 28 miles across in its narrowest part; between the towns of Aspinwall (or Colon) and Panama, upon its opposite sides, a railway has been constructed, and is extensively used for the transit of passengers. It is probable that (either here, or at some other part of the isthmus), a canal will ultimately be formed, by means of which the Atlantic and Pacific Oceans will be united.

504. *Islands*.—In the north are the Parry Islands, North Devon, Cockburn Island, Cumberland Island, Southampton Island, and Greenland, all of which are comprehended under the general name of the Arctic Archipelago.

505. Upon the east side of America are Newfoundland, Cape Breton Island, Prince Edward's Island, and Anticosti, all situated in the neighbourhood of the Gulf of St. Lawrence; Long Island, on the coast of the United States; the Bermuda Islands; and the numerous islands of the West Indian Archipelago.

506. The archipelago of the West Indies consists of three principal divisions:—The *Greuter Antilles*, the *Lesser Antilles*, and the *Bahama Islands*. The greater Antilles include the large islands of Cuba, Hayti (or St. Domingo), Jamaica, and Porto Rico. The lesser Antilles embrace the Virgin Islands, St. Christopher, Barbuda, Antigua, Guadaloupe, Dominica, Martinique, St. Lucia, St. Vincent, Grenada, Barbadoes, Tobago, Trinidad; and the islands of Margarita,

divided into the *Leeward* and *Windward* Islands: the former division embracing those which lie between the Virgin Islands and the island of Dominica; and the latter including the chain between Dominica and Trinidad. The greater Antilles, and most of the lesser Antilles, are high and mountainous: the Bahamas are low coral reefs.

507. To the southward of America are the Falkland Islands, Georgia Island, Staten Island, and the archipelago of Tierra del Fuego. Upon the west side of the continent are Juan Fernandez, the Galapagos Islands, the Revillagigedo Islands, Vancouver Island, Queen Charlotte's Island, and several others adjacent to the north-west coast.

508. *Mountains*.—The mountains of the New World embrace seven principal ranges or systems, three of which are in North America, three in South America, and one consists of the mountainous islands of the West Indies.

509. The mountain chains of North America are the *Rocky Mountains*, the *Sierra Nevada* (of California), and the *Apalachian* or *Alleghany Mountains*. The Rocky Mountains have an average elevation of between 7000 and 8000 feet in the higher portion of the chain, and the loftiest summits are nearly 16,000 feet above the sea; but towards the south they spread out into the immense plateaus of Mexico, upon which numerous isolated peaks rise to a great elevation. Among these is Popocatepetl (17,773 feet above the sea), which is probably the highest summit in North America.

The Sierra Nevada form part of a succession of mountain-ranges which appear to extend from the southern extremity of the peninsula of California along the western coasts of America as far as the 60th parallel of North latitude, and which have sometimes been embraced under the general name of the Maritime Alps of America. At the northern extremity of this system, and closely adjacent to the north-west coast, are the volcanoes of St. Elias (16,775 feet), and Fairweather (14,750 feet).

510. The mountain systems of South America are the *Andes*, the *Mountains of Parime* or *Guiana*, and the *Mountains of Brazil*. The Andes run through the whole length of South America, close to the shores of the Pacific, and are, next to the Himalaya, the highest and most stupendous mountain-system in the world. The average elevation of the Andes is from 12,000 to 14,000 feet in the central part of the system: the loftiest summit is *Aconcagua* (in Chili), which is 23,910 feet above the sea, and is the highest known mountain in the New World. *Chimborazo*, in the state of Ecuador, is 21,415 feet in height, and is the third in elevation.

the western coast of the New World. Many of the higher summits of the Andes are active volcanoes, and numerous volcanic peaks rise upon the table-lands of Central America and Mexico (see p. 165).

512. *Table-lands*.—In North America, to the westward of the Rocky Mountains, are the plateau of Oregon, and the Great Basin or plateau of California. Further to the south are the plateaus of Mexico and Guatemala, the highest parts of which are from 6000 to 9000 feet above the sea.

513. In South America are several high and narrow plateaus, lying between the parallel ranges of the Andes; the principal of them are the plateau of Quito (9000 feet above the sea), the plateau of Pasco (from 10,000 to 11,000 feet), and the plateau of Titicaca (13,000 feet).

514. *Plains*.—The whole interior of North America, from the Gulf of Mexico to the Arctic Ocean, is a vast plain, or lowland. This includes the region of the *prairies*, which are tracts of immense extent, uniformly level, and covered with tall grass.

515. The interior of South America also forms a great lowland tract. The northern portion of this is watered by the river Orinoco, and forms the region of the *llanos*, which are level grassy districts, similar to the prairies, but annually inundated by the rivers. The middle portion belongs to the basin of the Amazon, and includes vast *selvas* or wooded districts, covered with trees of gigantic growth. The southern part is drained by the Rio de la Plata, and comprehends the *pampas*, which are dry and level tracts, covered with tall grass and huge thistles.

516. *Deserts*.—Part of the Great Basin in North America is desert, and there are also desert plains stretching along the eastern base of the Rocky Mountains. In South America are the desert of Gran Chaco, the Salt Desert of Las Salinas, and the desert of Atacama. But the deserts of the New World are of trifling extent compared to those of Asia and Africa, and bear but a very small proportion to the whole dimensions of the continent.

517. *Rivers*.—The river-systems of America are on a scale of vast magnitude, and surpass both in length of course and extent of drainage those of any other part of

518. In *North America* the principal river is the Mississippi, which waters all the southern half of the great plain of the interior: its longest branch is called the Missouri, which rises in the Rocky Mountains and flows upwards of 2500 miles to its junction with the other arm of the river, whence its further course to the Gulf of Mexico is about 1500 miles; so that the entire length of the river by this branch exceeds 4000 miles. Among the principal tributaries of the Mississippi are (besides the Missouri), the Ohio, St. Peter's, Platte, Kansas, Arkansas, and Red River.

519. The other principal rivers of North America are the St. Lawrence, which flows into the Gulf of Mexico; the Hudson, Delaware, Susquehanna, Potomac, James, and Roanoke, flowing into the Atlantic Ocean; the Rio Grande del Norte, into the Gulf of Mexico; the San Juan, into the Caribbean Sea; the Colorado, into the Gulf of California; the Sacramento and Oregon, into the Pacific Ocean; the Mackenzie, into the Arctic Ocean; and the Churchill and Nelson, into Hudson's Bay.

520. The three great rivers of *South America* are the Orinoco, Amazon, and La Plata, all of which flow into the Atlantic Ocean. The Amazon rises in the Andes, and rivals the Mississippi in length of course and extent of drainage: it has a vast number of tributaries, the largest of which is the Madeira. The Rio de la Plata is a broad estuary, formed by the junction of the rivers Parana and Uruguay: the Parana is joined by the river Paraguay.

521. The other principal rivers of South America are the Magdalena, flowing into the Caribbean Sea; the Essequibo, Demerara, Berbice, Corentyn, Surinam, and San Francisco, into the Atlantic Ocean.

522. *Lakes.* — In North America are lakes Superior, Huron, Michigan, Erie, and Ontario, which have together an area of 96,000 square miles, and are all connected with the sea by the stream of the St. Lawrence. These are the largest fresh-water lakes in the world.

523. The other principal lakes of North America are the Great Bear Lake, Slave Lake, Lake Athabasca, Lake Winnipeg, Lake Champlain, and Lake Nicaragua.

caybo is near the north coast, and is connected with the Gulf of Venezuela by a narrow channel. Many temporary lakes are formed during the rainy season, but they disappear with its termination: Lake Xarayes, in the west of Brazil, is of this character.

525. *Soil*.—The great river-valleys both of North and South America have, in general, an exceedingly fertile soil. The plains which extend along the coast, as in Brazil, Guiana, and part of the eastern shores of the United States, are also distinguished by great fertility.

526. *Climate*.—The climate of America is both colder and more humid than that of the Old World. South America is warmer than the northern division of the continent, and the western side of North America has a higher temperature than the eastern, besides experiencing in a less degree the extremes of heat and cold. The high plateaus of Mexico and Quito have a climate which resembles a perpetual spring, scarcely varying in temperature throughout the year, while the low plains at their base are intensely hot, and are subject to the alternations of drought and moisture.

527. *Minerals*.—The mineralogy of America is exceedingly rich. The *diamond* is found in Brazil, and other precious stones both there and in other parts of South America. Both *gold* and *silver* occur in the New World in great abundance, and at the present time the quantity of gold supplied by California far exceeds that furnished from any other country on the globe, except Australia. Gold is likewise found in Mexico, and also in New Grenada, Brazil, and many other countries of South America.

528. *Silver* is abundant on the table-lands of Mexico, and also in Peru, Bolivia, New Granada, Chili, and La Plata. *Copper* is found in Chili, Peru, Mexico, Canada, and the United States: *lead* in the United States, Mexico, Peru, and Bolivia: *tin* in Mexico and Peru. Both *iron* and *coal* abound in the eastern division of the United States, and the coal-fields of that country are of immense extent. Iron also occurs in Canada, New Brunswick, Nova Scotia, Cape Breton Island, and Mexico; coal, in New Brunswick and Nova Scotia.

529. *Vegetation*.—The products of every climate abound in the different regions of this continent, and in some its vegetation is most exuberant. The forests and

magnificence. The trees are pines and birches, with an endless variety of oaks, maples, cypresses, tulip trees, mahogany trees, logwood, Brazil wood, &c. Vast quantities of sugar, cotton, tobacco, coffee, cocoa, are produced, as well as dye-woods and medicinal barks.

530. *Animals.* — The largest wild animals are the bison, musk ox, and reindeer, confined to North America; immense troops of wild horses wander over the prairies and pampas. The llama, guanuco, paco, and vicuna inhabit Peru, and the tapir is also found there. There are several species of dogs, the most remarkable of which are the Newfoundland dog and the arctic fox. The beaver inhabits North America. The horse, ox, sheep, and hog have been introduced from Europe. The beasts of prey are few: a number of bears, some of them of the largest and most formidable description, are found in the arctic regions; the grizzly bear inhabits the Rocky Mountains; the puma is found in both North and South America; but the jaguar is limited to South America.

531. The birds are exceedingly numerous. The condor, which is the largest and most powerful of the feathered tribes, inhabits the most inaccessible parts of the Andes. Eagles, vultures, falcons, and other birds of prey are numerous; a species of ostrich roams over the pampas. The woods are the resort of macaws, parrots, and parrots, and of wild turkeys and pigeons, &c. Waterfowl are exceedingly numerous: along the water-courses there are myriads of flamingoes, scissorbeaks, fishing falcons, cormorants, herons, &c.

532. Tropical America abounds with a great variety of monkeys. The vampyre bat, which is confined to South America, attacks the larger animals, and even man himself when asleep. As its bite is not sufficiently painful to awaken the victim, the bleeding it occasions sometimes proves fatal.

533. This continent is infested by an immense number of reptiles, the most common of which is the rattle-snake; but there are others less venomous. The true boa con-

America. Centipedes, enormous spiders, scorpions, &c., abound in these regions.

534. The inferior animal tribes are in great variety, and many of them are peculiar to this hemisphere.

535. *Fishes.* — The waters abound with fish: the number and variety in the Ohio is particularly great. In the fresh waters there are a surprising number of bivalve shells. The tropical rivers produce enormous lizards and alligators; and in the lakes of Caraccas is found the gymnotus or electric eel. The fisheries of mackerel, herring, and particularly that of cod on the coast of Newfoundland, are very important.

536. The *domestic animals* are the horse, ox, and sheep; but of all the domestic animals pigs seem to be the most numerous.

537. *Races of men.* — The American race is supposed to be derived from the Mongolian family. The native inhabitants, however, differ in form, language, and in intellect from any other variety of the human race. The cheek-bones are prominent, arched, and rounded; the face broad, but not flat; the skull generally light; the forehead low; eyes deep-seated; nose rather flat, but prominent; the skin red, more or less dark or copper-coloured; the hair thin and lank, and little or no beard. In this class are comprehended all the native American tribes, excepting, of course, the Esquimaux and the descendants of European and African colonists.

538. Since Columbus discovered this country a tide of emigration has flowed from Europe to America, and by far the greatest portion of the population is now of European descent. North America is principally peopled by Britons and their descendants; a considerable number of French in Canada, some Germans in Pennsylvania and New York, and Dutch, Swedes, and Spaniards in other localities.

POLITICAL DIVISIONS.

539. The following are the different states and colonies

States, Territories, and Colonies.	Capitals.	Estim. Pop. (latest Census.)
British North America: —		
Canada - - -	{ Quebec, Montreal, } { Toronto, Ottawa }	2,500,000
New Brunswick - - -	Fredericton, St. John	252,000
Nova Scotia - - -	Halifax - - -	330,000
Prince Edward Island - - -	Charlotte Town - - -	80,000
Newfoundland - - -	St. John - - -	122,000
British Columbia - - -	New Westminster - - -	64,000
Vancouver Island - - -	Victoria - - -	25,000
Hudson Bay Territory - - -	Fort York - - -	100,000
Russian America - - -	New Archangel - - -	61,000
Danish America (Greenland) - - -	—	9,800
United States (in 1860) - - -	Washington - - -	31,600,000
Mexico - - -	Mexico - - -	8,000,000
Total North America		43,143,800
Central American States:		
Guatemala - - -	Guatemala - - -	850,000
San Salvador - - -	S. Salvador - - -	600,000
Honduras - - -	Comayagua - - -	350,000
Nicaragua - - -	Leon - - -	300,000
Costa Rica - - -	S. José - - -	127,000
British Honduras - - -	Belize - - -	19,000
Total Central America		2,246,000
Hayti - - -	Port au Prince - - -	660,000
Spanish West-Indies (Cuba, Porto Rico, &c.) - - -	Havannah - - -	2,032,000
British West India Isles - - -	Kingston - - -	900,000
French, ditto - - -	Basseterre - - -	276,000
Dutch, ditto - - -	- - -	32,000
Danish, ditto - - -	- - -	18,000
Swedish, ditto (St. Bartholomew) - - -	- - -	7,000
Total, West India Islands		3,825,000
Venezuela - - -	Caracas - - -	1,565,000
New Granada - - -	Santa Fe de Bogota - - -	2,224,000
Ecuador - - -	Quito - - -	1,040,000
Guiana { British - - -	Georgetown - - -	163,000
{ French - - -	Cayenne - - -	23,000
{ Dutch - - -	Paramaribo - - -	60,000
Brazil - - -	Rio de Janeiro - - -	7,617,000
Peru - - -	Lima - - -	2,500,000
Bolivia - - -	Chuquisaca - - -	1,987,000
Argentine Republic or La Plata - - -	Buenos Ayres - - -	1,172,000
Paraguay - - -	Assumption - - -	1,337,000
Uruguay (Banda Oriental) - - -	Monte Video - - -	250,000
Chili - - -	Santiago - - -	1,500,000
Patagonia - - -	- - -	-
Total South America		21,438,000
Grand Total		70,062,800

THE BRITISH POSSESSIONS IN NORTH AMERICA.

540. The British colonies in North America are very extensive. They include Canada, with half of the great lakes Ontario, Erie, Huron, and Superior; also Nova Scotia, Cape Breton, and Prince Edward Islands; New Brunswick, Labrador, Newfoundland, the Bermudas, and other islands; British Columbia and Vancouver Island; and the territory of Belize in Central America.

541. *Canada* was formerly divided into Lower or Eastern, and Upper or Western, each having a separate governor; but an insurrection having broken out in 1837 among the French inhabitants of the former province, the two were united in 1840. The character and circumstances of the two, however, are still different. Lower Canada is a level and fertile country, though in a cold climate, and is situated mostly to the north of the river St. Lawrence. The inhabitants are chiefly descendants of early French settlers, still professing the Roman Catholic religion. The chief towns are Quebec and Montreal, both finely situated, and carrying on a great commerce. Upper Canada, lying to the north of the great lakes of Ontario, Erie, Huron, and Superior, is still more fertile, and has of late years increased rapidly in population. Toronto, Kingstown, and Ottawa City, are the largest places in Upper Canada. The last-named of them has been proposed as the future capital of the entire province: it stands on the river Ottawa, the chief tributary of the St. Lawrence. The total population of Canada now exceeds 2,500,000.

542. *Nova Scotia*, with the attached island of Cape Breton, has a long range of deeply indented roads along the Atlantic. The fishery and timber trade are extensive, and there is an inexhaustible supply of coal. Halifax, with a very fine harbour, is the chief naval station of Britain in America. The population of Nova Scotia is 330,000. Prince Edward, a fertile island in the Gulf of St. Lawrence, with 80,000 people, forms a distinct

543. *New Brunswick* forms an extensive country, included in Nova Scotia till 1785, when it was made a separate government. It is covered with magnificent forests, particularly of pine, the produce of which is exported to the value of nearly 500,000*l.* The soil also is fertile, fitted either for grain or pasturage. The population exceeds 250,000. St. John's, at the mouth of the great river of that name, is the largest town and port; but Fredericton, higher up, is the seat of government. The chief timber trade is on the Miramichi river.

544. *Newfoundland*, with the adjacent coast of Labrador, is rocky and barren; but it is the seat of the greatest cod-fishery in the world, which is carried on from the shore by British subjects, and in the open sea by the French and Americans, who are allowed to dry and cure the fish on unoccupied parts of the coast. Of late years the herring fishery has become very important. There is also a great seal fishery upon ice islands in the neighbouring seas. The whole produce of fish and oil exported exceeds the value of 700,000*l.* The population exceeds 120,000. St. John's, the capital, is a great fishing station in a spacious bay. *The Bermudas* are a group of small islands, far out in the Atlantic, about 600 miles from the United States' coast. They are valued as a naval station.

545. *British Columbia*, which was first formed into a colony in 1858, is on the western side of the North American continent, between the Rocky Mountains and the Pacific Ocean. The valley of the river Fraser, which flows through it, has been found to contain valuable gold-fields, which have attracted a large number of emigrants thither. The soil and climate of British Columbia, so far as they are yet known, appear to be highly advantageous. The recently founded town of New Westminster, on the north bank of the Fraser, is the capital. *Vancouver Island*, which lies off the coast of British Columbia, is attached to the government of that province: its chief town is Victoria. Vancouver Island contains good coal which is worked by the settlers.

546. *Belize*, or *Belize*, is a British colony in Central

America. The country is adapted for raising sugar. Coffee, cotton, indigo, mahogany, cedar, sarsaparilla, log-wood, fustic, brasileto, and other dye-woods, are articles of export. Wild animals, birds, fish, and turtle are abundant. The population, which is chiefly composed of negroes, may amount to about 10,000. The capital is Belize, a seaport town situated on the Bay of Honduras. Population about 5,000.

547. *Russian America* comprehends the N. W. coasts from latitude 55° to 70° N. and longitude 141° to 168° W. In the territory, and also on the Aleutian Islands between America and Asia, Russia has some small settlements with a view to the fur trade.

548. *Greenland, or Danish America*, is an extensive region of N. E. America. The surface is generally high, rocky, and barren; the elevated parts are covered with eternal snow and glaciers. Small quantities of corn, potatoes, and kitchen herbs are raised. The natives, or Esquimaux, are a peculiar race, allied to the Mongolian family, of short squat stature and dark skin, employed chiefly in fishing and seal hunting.

THE UNITED STATES OF NORTH AMERICA.

549. The United States of America occupy the middle division of North America, and are bounded north by the British possessions; east by New Brunswick and the Atlantic Ocean; south by the Gulf of Mexico and United States of Mexico; and west by the Pacific Ocean. They lie between 25° and 49° of N. lat., and between $66^{\circ} 59'$ and 125° W. long. from Greenwich. They are distinguished for the vast extent of their territory, their rapid improvement, and their free constitution. The greater part of the inhabitants sprang from England, and were colonies depending on her till 1775, when, in consequence of the attempt to tax them without their consent, they revolted; and, after a long contest, being aided by France, obtained in 1783 an acknowledgment of their independ-

ence. By purchase from France and Spain, they procured Florida and Louisiana, and acquired thus an undisputed title to the country on and beyond the Mississippi. California was added to these territories in 1848, by conquest from Mexico.

550. The territory is thus of immense extent, and its population has increased more rapidly than in any other country. In 1791 it was 3,900,000; in 1860 it had risen to 31,600,000. Of these, however, nearly 4,000,000 were slaves. The people are most industrious in extending their agriculture and trade; they export vast quantities of cotton, timber, tobacco, grain, rice, pitch, potash, and skins. Their ships are to be found in every part of the world. Their imports and exports together amounted in 1860 to upwards of 150,000,000*l.* sterling. They have, besides, a vast inland traffic on the Mississippi, Ohio, and other great rivers. This they diligently extend by canals, railroads, and steam navigation.

551. The United States form a federal republic, governed by a President, chosen every four years, and a legislative body styled the Congress, which consists of a Senate (the members of which are chosen for a term of six years), and a House of Representatives (elected for two years). Each State has also a legislature of its own, the functions of which are limited to local purposes. A civil war, which broke out in 1861, and is still in progress, threatens the disruption of the Union, which, indeed, can hardly be said to retain more than a nominal existence. The Southern (or seceded) States — in all of which slavery is a recognised institution — assert their claim to existence as an independent nation, under the title of the Confederate States. The Northern, or free States, remain attached to the Federal government.

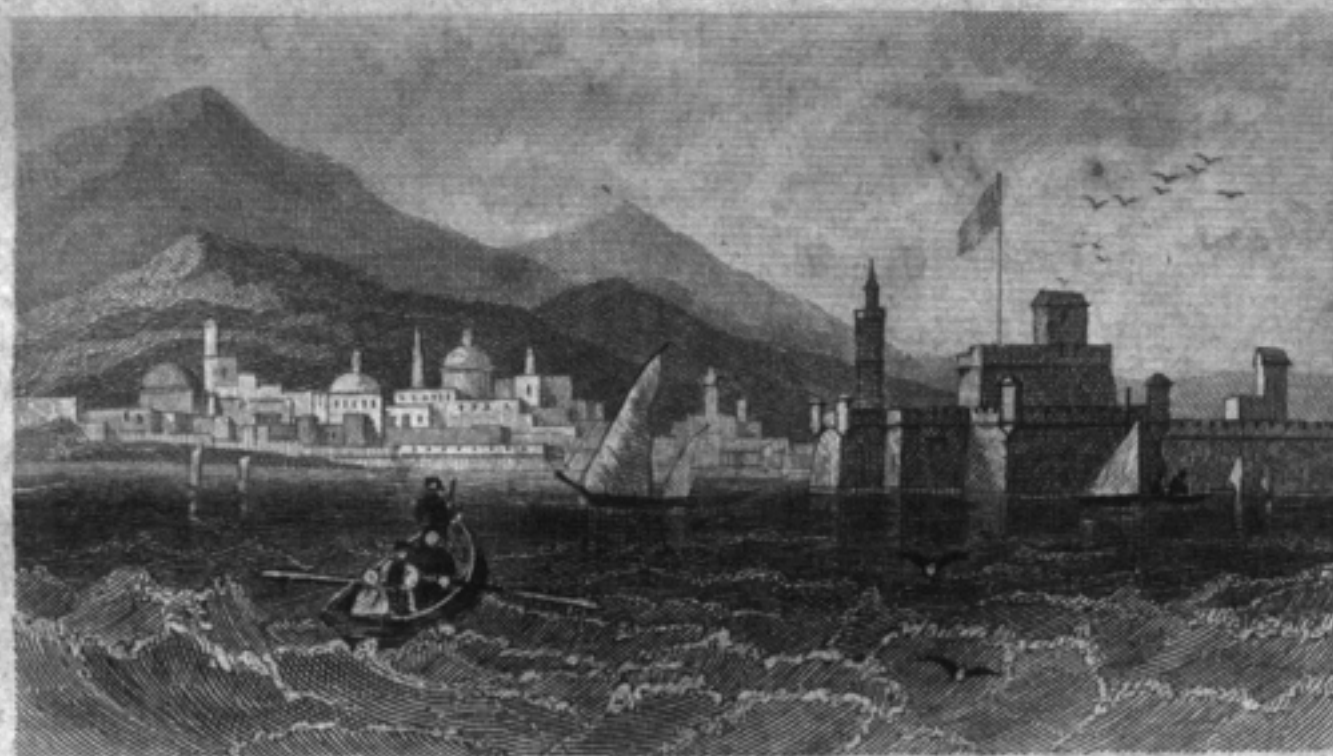
552. Prior to the outbreak of the civil war now raging, the United States comprehended 34 distinct States, together with the district of Columbia (which contains Washington, the federal capital), and seven territories. The following is a list of the States, their population in 1860 (in round numbers), and the principal towns in



NEW YORK.



NORTH AMERICAN INDIANS.



VERA CRUZ. MEXICO.

NORTHERN AND WESTERN STATES (FREE).

States.	Population.	Chief Towns.
Maine -	628,000	Augusta, Portland.
New Hampshire -	326,000	Concord.
Vermont -	315,000	Montpelier.
Massachusetts -	1,231,000	Boston, Lowell.
Rhode Island -	174,000	Newport, Providence.
Connecticut -	460,000	Hartford, Newhaven.
New York -	3,887,000	New York, Albany, Buffalo.
New Jersey -	672,000	Trenton.
Pennsylvania -	2,906,000	Philadelphia, Pittsburg.
Delaware -	112,000	Dover.
Ohio -	2,339,000	Columbus, Cincinnati.
Michigan -	749,000	Lansing, Detroit.
Indiana -	1,350,000	Indianapolis.
Illinois -	1,711,000	Chicago, Springfield.
Wisconsin -	775,000	Madison, Milwaukee.
Iowa -	674,000	Iowa City.
Minnesota -	162,000	St. Paul.
Kansas -	107,000	Kansas City.
California -	380,000	San Francisco, Benicia.
Oregon -	52,000	Salem.

SOUTHERN STATES (SLAVE).

Maryland -	687,000	Baltimore, Annapolis.
Virginia -	1,596,000	Richmond.
North Carolina -	992,000	Raleigh, Wilmington.
South Carolina -	703,000	Columbia, Charleston.
Georgia -	1,057,000	Milledgeville, Savannah.
Florida -	140,000	Tallahassee, Pensacola.
Kentucky -	1,155,000	Frankfort.
Tennessee -	1,109,000	Nashville.
Alabama -	964,000	Montgomery, Mobile.
Mississippi -	791,000	Jackson, Vicksburg.
Missouri -	1,173,000	Jefferson, St. Louis.
Arkansas -	435,000	Little Rock.
Louisiana -	709,000	New Orleans, Baton Rouge.
Texas -	601,000	Austin, Galveston.

553. The whole of the Southern States, with the exception of Maryland, Kentucky, and Missouri, which occupy a neutral position, have declared their secession from the general government of the

555. The city of *Washington*, in the district of Columbia, is the capital of the United States, and the seat of the general government. *Washington* is situated at the junction of the two arms of the Potomac river; it is regularly built, and was laid out in the hope of its becoming a large and flourishing city, — an expectation which has not been realised, its population being only 60,000. But the Capitol, which contains the halls in which the two Houses of Congress assemble, is a splendid edifice, — admitted to be the finest in America.

New York, situated at the mouth of the river Hudson, is the largest city in the New World. Its commerce probably exceeds that of any other city on the globe, excepting London, and it is still rapidly increasing in size and wealth: the population is 814,000. *Boston*, on the east coast of the state of Massachusetts, has 178,000 inhabitants, and is the chief city in the north-eastern or New England States. It possesses great trade, and is also highly distinguished as a seat of literature. *Lowell* (about 30 miles to the north-westward of *Boston*) is the principal seat of the cotton-manufacture: it is sometimes called the "Manchester" of America. *Portland*, on the coast to the northward of *Boston*, and *Providence*, to the south by west of that city, are both flourishing sea-port towns, and great seats of trade.

Philadelphia, on the river Schuylkill, has 568,000 inhabitants, and is the second city in the Union in point of population. It is the chief seat of the sect of the Quakers. *Baltimore*, on the estuary of the Chesapeake river, with 214,000 inhabitants, is a flourishing seat of trade, as also was *Charleston*, on the coast of South Carolina (40,000 inhab.), prior to the outbreak of civil war. *New Orleans*, at the mouth of the Mississippi, is a large and highly-important commercial city, with 171,000 inhabitants: it is the chief outlet for the produce of the extensive valley through which the Mississippi flows.

The largest place in the interior is *Cincinnati*, on the north bank of the river Ohio, which within the last half century has grown up into a busy commercial town, carrying on a continual steam-traffic by means of the rivers and canals. In the year 1800 it had only 2540 inhabitants; in 1860 its population exceeded 160,000.

St. Louis, on the Mississippi (a short distance below the junction of the Missouri); *Buffalo*, at the eastern extremity of Lake Erie; *Pittsburgh*, at the junction of the two arms of the Ohio, near the western foot of the Alleghany Mountains; and *Chicago*, at the head of Lake Michigan, besides a vast number of other places in the Union, are busy seats of trade and industry. But new towns and cities are of rapid growth throughout the States.

THE NATIVE TRIBES OF NORTH AMERICA.

556. Numerous small tribes, or hordes, of from 500 to 5000 each, occupy the vast extent of country from the United States to the Arctic Ocean; also Greenland, Labrador, the regions around Hudson's Bay, and the whole of the

on the uncertain produce of the chase. The British companies at Montreal and Hudson's Bay despatch traders in all directions to collect from the Indians the valuable furs with which these regions abound.

557. The northern coast of America, only recently discovered, has been found to border on the vast expanse of the Arctic Ocean. It is inhabited by the Esquimaux, a race quite different from the Indians, and comparatively laborious, peaceable, and intelligent. They subsist by fishing, and chasing the wild and amphibious animals which abound on this coast. At the northern extremity of America, Captain Sir John Ross discovered a large peninsula called Boothia, partly inhabited. In the ocean beyond, Captain Parry discovered a range of large islands, of which the principal have been called Melville, Bathurst, and Cockburn. Banks Land, Prince Albert Land, and several other insular tracts, have been added to these by subsequent navigators. The great problem of the discovery of a North West Passage, which cost the lives of Sir John Franklin and his gallant crew, was solved in 1854 by Capt. (now Sir Robert) M'Clure.

MEXICAN CONFEDERATION.

558. The isthmus that joins North and South America consists of the republic of Mexico and Guatemala; Mexico formerly included Old or Lower and New or Upper California, the latter now belongs to the United States. The chief towns are, Mexico, Puebla, Acapulco, and Vera Cruz. Mexico, the oldest city in America of which we have any account, is spacious and magnificent. The present constitution of Mexico resembles that of the United States of North America, being a federative republic.

559. *Mexico* consists chiefly of a high table-land, from which arise Orizaba, Tuxtla, Popocatepetl, Jorullo, and Colima, and other lofty volcanic peaks. It is fitted to produce the grain and fruits of the temperate climates. The maritime districts, indeed, are rich in tropical pro-

century, yielded annually nearly 5,000,000*l.* sterling; but they were greatly injured during the revolution, and, notwithstanding the application of a large British capital, have not been fully restored.

CENTRAL AMERICA.

560. Central America includes the republic of Guatemala, Yucatan, and Belize. Yucatan, a peninsular state of Central America, was declared independent of Mexico, January 1st, 1850. For Belize, see page 142.

561. *Guatemala*, or *Guatimala*, the largest of the states of Central America, of which it is the republic, extends, together with Nicaragua, Costa Rica, and the Mosquito territory, from lat. 8° to 18° N., and long. $82^{\circ} 30'$ to 94° W.; exclusive of these, Guatemala proper extends between lat. 14° and 17° N., and long. 89° and 94° W., having north Yucatan and Mexico, east Honduras and San Salvador, south-west the Pacific. Area 75,098 square miles. Population 850,000: larger portion aboriginal Indians; the other whites and mestizos. The surface is very irregular, consisting of mountains, tablelands from 2000 to 5000 feet in elevation, and plains. The mountains are generally of volcanic origin, with several active volcanoes. Earthquakes are very frequent. Climate of the coast-valleys very hot and unhealthy; of the elevated country more temperate. Rainy season commences in June; dry season from October till May: north winds prevail in December and January.

562. The principal cities are, New and Old Guatemala, Quezaltenango, Coban, and Chequimula. New Guatemala, the capital, is situated in a rich and spacious plain, at an elevation of 4961 feet, and has a flourishing trade with Vera Cruz, Mexico, &c., in sugar, coffee, cotton, dye-woods, and other native products. It was founded after the destruction of Old Guatemala by an earthquake in 1773. Guatemala la Antigua, or Old Guatemala, lies twenty-four miles west-south-west of the newer capital, at the foot of the Volcan d'Agua, by an eruption of which it

was overwhelmed in 1541. It was again devastated by an earthquake in 1773, but has been since rebuilt, and is stated to have a population of 12,000 persons. Many of its old public buildings remain entire, comprising a fine cathedral and a palace. Around it are many sugar establishments, and in 1846 its exports of cochineal amounted in value to 6000*l*.

563. The republic exports indigo, barilla, cochineal, and the finest cocoa. At different elevations, this and all the adjacent states afford every climate and species of production. In a few hours the traveller may pass from regions of eternal snow, through European cultivation, to plains covered with sugar-canes and coffee-trees. But the country is in a most unsettled state, in consequence of perpetual changes in the government.

564. *Mosquitia*, or *the Mosquito Territory*, is a maritime tract extending from Cape Gracias-à-Dios to the mouth of the river San Juan. It is mountainous in the interior, elsewhere highly fertile, and abundantly watered. The climate is stated to be more healthy than that of the West India Islands. The principal towns are, Bluefields, or Blewfields, the capital; and San Juan de Nicaragua. Products comprise cacao, cotton, sugar, indigo, vanilla, and logwood. During the year 1846, a considerable immigration of Germans took place at Bluefields river. The government was for some time in the hands of a native sovereign, who claimed to rank as an independent prince, under the protection of the British nation. The Nicaraguan government, however, claimed the sovereignty of this tract of coast, which has within a recent date been declared by treaty to form a part of the republic of Nicaragua.

THE WEST INDIES.

565. The West Indies consist of a group of islands lying between the continents of North and South America, and divided into the larger and smaller Antilles.

566. The former consist of Cuba, Hayti, Jamaica, and

Porto Rico; and the latter, of the Virgin, Windward, and Leeward groups, called the Caribbee Islands.

567. The largest of these islands, Cuba (whose chief town is Havanna, a flourishing sea-port,) and Porto Rico, belong to Spain, and have of late advanced greatly in culture and population.

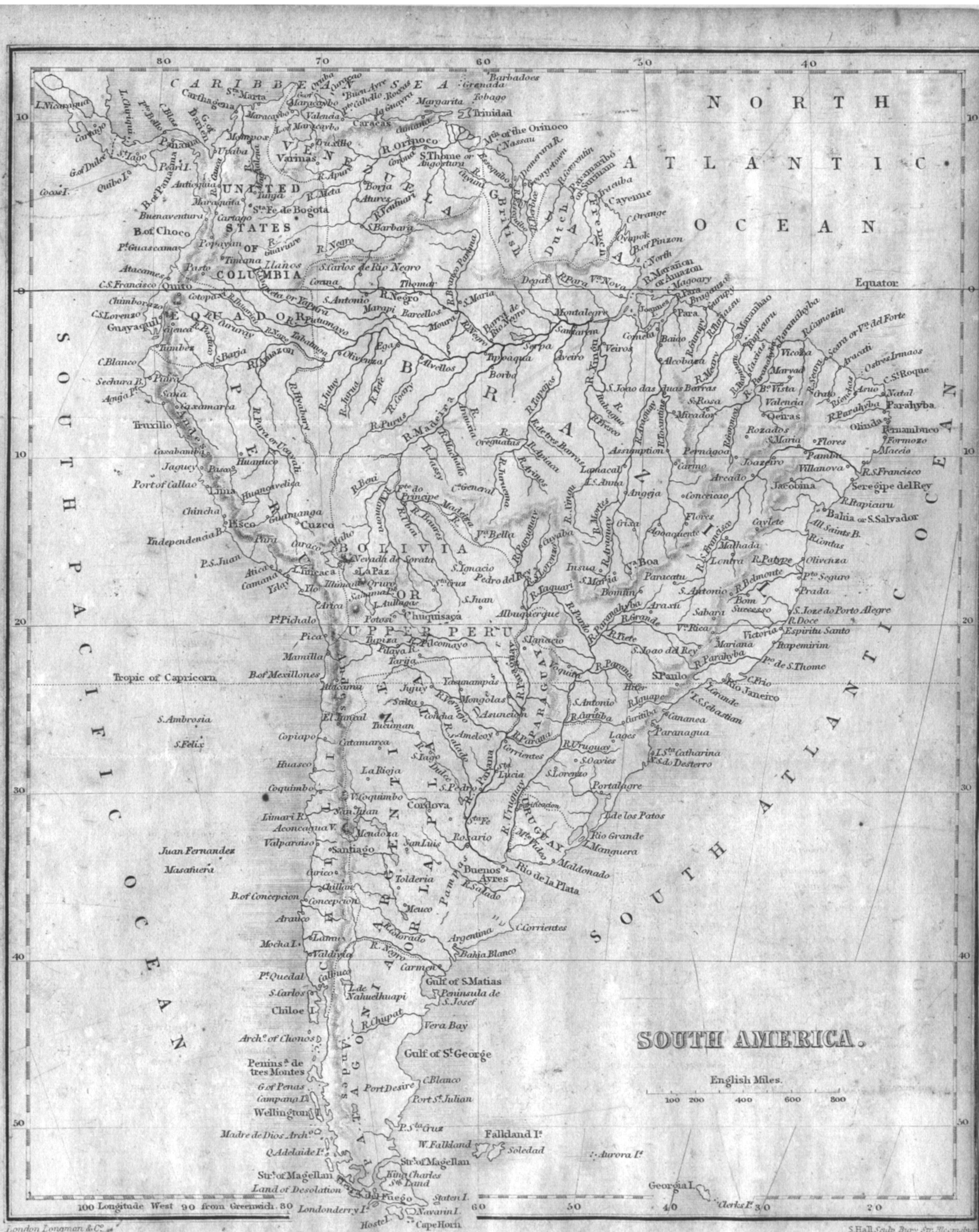
568. Hayti, called also St. Domingo or Hispaniola, is one of the largest and richest of these islands. The western part formerly belonged to France, and the eastern to the Spaniards; but the negro slaves in the French part rebelled in 1791, and, after long and sanguinary contests, the whole island was united into one negro republic, under a President. Recently, the eastern part has again become subject to Spain. The western part forms the Republic of Hayti; chief town, Port au Prince.

569. Jamaica is a large island belonging to the English, and in a high state of cultivation. Vast quantities of sugar, rum, and coffee are annually exported. Kingston is the chief town.

570. Of the smaller Antilles, 1. the *English* islands are Trinidad, Tobago, Grenada, Barbadoes, St. Vincent, St. Lucia, Dominique, Montserrat, Nevis, Antigua, St. Christopher's, Tortola, and Virgin Gorda; 2. the *French* islands are Martinique and Guadeloupe; 3. the *Danish* are St. Thomas, St. Cruz, and St. John; 4. the *Dutch* are St. Eustatius, St. Martin, and Saba; and, 5. the *Swedish*, St. Bartholomew.

571. The Bahamas, north from Hayti and Cuba, belong to the English, and are numerous, but small and unproductive. To the Dutch belongs Curaçoa (celebrated for giving name to the liqueur so called), off the north coast of Venezuela.

572. The native Caribs having been inhumanly destroyed by the sword and musket, these islands are now inhabited by about one eighth Europeans, one sixth Creoles, and the rest negroes, formerly in a state of bondage, but who, in the British islands, have been now completely emancipated. They supply Europe almost entirely with sugar, rum, and coffee, and furnish also



SOUTH AMERICA.

573. South America is a vast peninsula, comprising nearly half the American continent. It is distinguished by the grandeur of its natural features. The great chain of the Andes, in its loftiest height, extends from north to south, near the western coast; and the chief river, the Amazon, surpasses in the length of its course any other in the known world, except the Mississippi. The Rio de la Plata and the Orinoco are also of very great magnitude. The mountains are the highest on the surface of the globe except the Indian chain of Himalaya. Chimborazo, 21,415 feet high, was long supposed the loftiest in South America, but the peaks of Sahama and Aconcagua, are now found to be still more elevated; the latter, which is the highest, has an elevation of 23,910 feet. Cotopaxi is the most tremendous volcano known, often throwing out streams of warm water, with dead fishes; and its explosions, according to Humboldt, are heard at the distance of more than 100 miles. The plains are most extensive, and generally very fruitful; and the mines are unrivalled in their abundance of the precious metals.

574. The finest parts of this region, after their first discovery, were conquered by Spain, whose jealous and despotic policy checked that improvement which might have resulted from their vast natural advantages. Within the last twenty years, however, this yoke has been completely shaken off, and Spain does not now possess an inch of ground on the American continent. It has been formed into independent republican states, of which the principal are: Venezuela, New Granada, Ecuador, Peru (Lower and Upper), and Bolivia, lately erected into the Peru-Bolivian Confederation; Chili; and La Plata. Brazil, conquered by the Portuguese, has also become a separate state, with a free constitution. A portion of Guiana, and the most interior and southern parts of the continent, are still chiefly in the possession of native tribes.

575. *Colombia* is the most important of the new re-

publics, and that which earliest shook off the Spanish yoke. The western part consists of a range of very lofty mountains (including Chimborazo and Cotopaxi), with the declivities and deep valleys between them; while the eastern is composed of immense level plains called *Llanos*. The region is generally fertile, fit for every tropical product, and distinguished for its excellent cocoa. Gold is abundant in the eastern district of Choco.

576. Colombia has been much agitated by internal dissension, and has lately been split into three distinct parts, — Venezuela, New Granada, and Ecuador; each of them now an independent republic. It contains a number of considerable cities, among which are, Caraccas, Cumaná, and Carthagená, on the north coast; Panamá and Porto Bello on the opposite sides of the Isthmus of Darien; Santa Fé de Bogotá, Quito, and Popayan, in the interior; and Guayaquil, on the South Sea. The population is about 3,200,000, including negroes and Indians, who have been invested with the rights of citizens.

577. *Guiana* is divided among different European nations. The English have the flourishing colonies of Demerara and Berbice, rich in sugar, cotton, and coffee; the Dutch have Surinam, also prosperous; and the French have Cayenne, famous for its pepper. The interior, watered by the Orinoco, is claimed by the Portuguese; but is chiefly in possession of savage native tribes. The same may be said of the extensive tracts, in the centre of the continent, called Amazonia, though claimed by the Portuguese as part of Brazil.

578. *Brazil* occupies nearly the whole eastern coast between the La Plata and the Amazons, to an indefinite distance into the interior. It is a vast and fruitful plain, diversified by mountain ranges of moderate elevation, which, in this climate, do not obstruct culture: that of sugar and cotton has of late been greatly extended; too much, indeed, by means of the importation of negro slaves. Some parts of Brazil are also very rich in diamonds and in gold. The country was long des-

that kingdom, governed by a prince of the house of Braganza, but on a very free and constitutional basis. The population is upwards of seven millions. Rio de Janeiro, the capital, is a large city, beautifully situated, and the seat of a great trade. Bahia, or San Salvador, and Pernambuco, are also flourishing sea-ports. Brazil is a country of immense extent, and has an area of more than 3,000,000 of square miles.

579. *Peru*. — This republic, which consists of a president and a congress of two houses, is situated on the western side of South America. The territory is occupied by the highest range of the Andes, with their offsets and intervening valleys. In the western districts rain has never been known to fall; but the ground is moistened by heavy fogs. The greater part may be considered desert; but the eastern districts are clothed with immense forests, which are inhabited by large numbers of Indians. The mines of silver and mercury, which were the richest in the world, have greatly declined in value. The chief silver mines are at Pasco, and those of mercury at Guancavelica. In the north agriculture is little attended to, cattle-rearing forms the principal employment of the people; but the southern portion is inhabited by a very numerous agricultural and industrious Indian population, who have hitherto formed the fairest portion of the Peruvian state.

580. Lima, the capital, is the most beautiful city of South America, and carries on an extensive trade by its port of Callao. Cuzco is the ancient capital of the Incas.

581. *Bolivia*. — So called from Bolivar, the Colombian president, who effected its liberation in 1823. This republic is situated to the south-west of Peru: the centre of the country is covered with ramifications of the Andes. The valley of Titicaca, in which is situated the lake of the same name, is rather fertile; but the region between the Andes and the Pacific is nearly barren, and is called the desert of Atacama. The plains of Moxos and Chuquitos are covered with dense forests: numerous streams from the Andes intersect the country. Gold is found in

mines of Potosi was for a long time very great, though now on the decline. The foreign commerce is small, owing to the state being almost shut out by the Andes from contact with sea. Cobija, a small place, is its only sea-port. Chuquisaca is the capital of the state, and the seat of the general government.

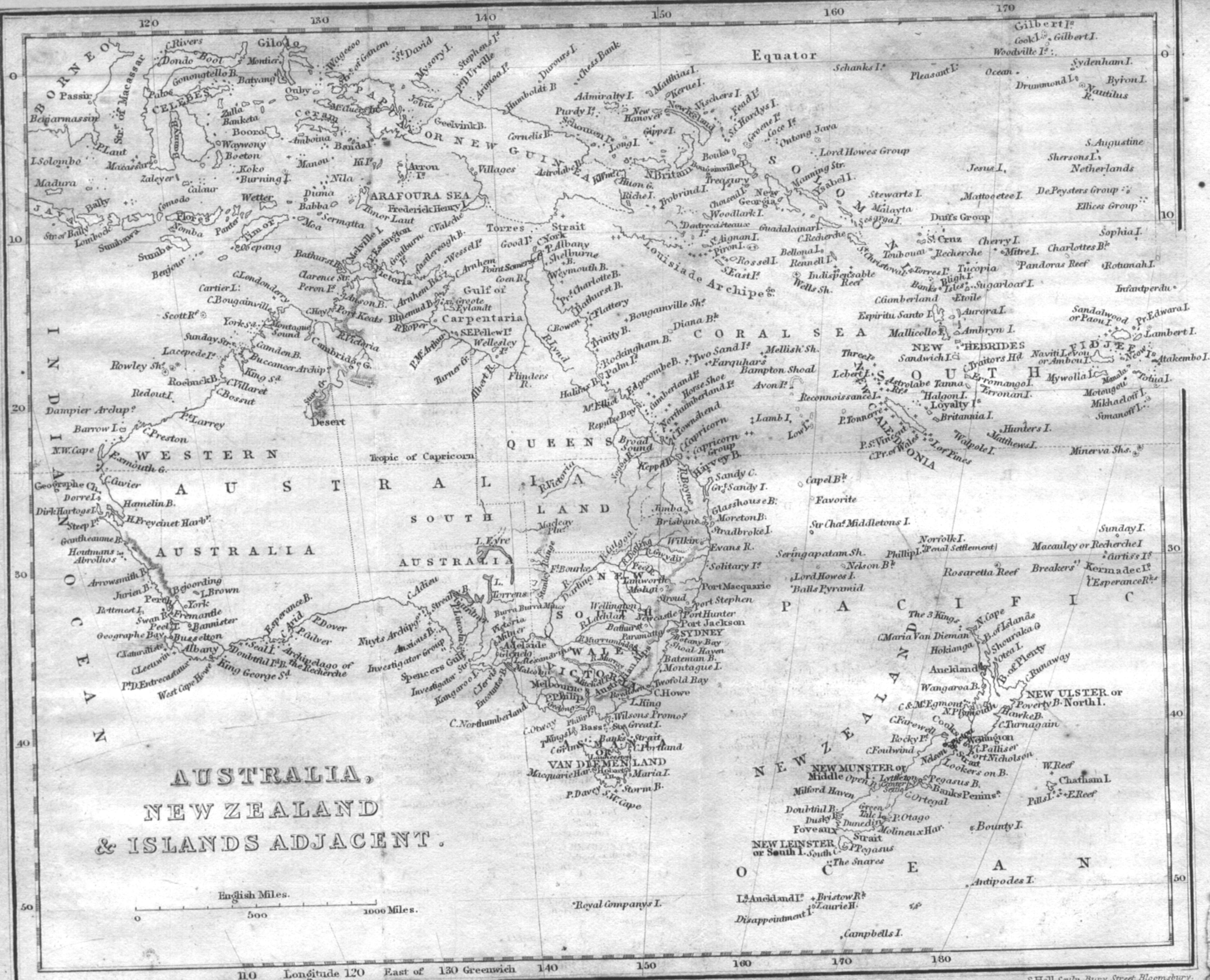
582. *Argentine Republic, or La Plata*, consists of an immense plain, watered by the river of that name, and reaching nearly across the continent, from the Atlantic to the Andes. Great part of the surface consists of wide plains, called *pampas*, covered with luxuriant herbage, and on which vast herds of wild cattle have multiplied, whose hides form the chief object of trade. The territory is formed into a sort of federal republic, the constitution of which is not yet fully settled. Buenos Ayres, the capital, is at the mouth of the La Plata, and the chief interior towns are Cordova and Mendoza.

583. *Paraguay*, on the upper part of the river, with its capital, Assumption, was till lately despotically ruled by the celebrated Dr. Francia, who died in 1841. This district produces the *maté*, or herb of Paraguay, used as tea throughout all these countries.

584. *Uruguay*, south of the La Plata, forms now a separate republic. Its chief town is Monte Video.

585. *Chili*, to the south of Peru, consists of a long, narrow, but very fertile plain, between the Andes and the ocean. It contains mines of gold, and still more valuable ones of copper. Industry and cultivation are yet imperfect, but in a progressive state. Santiago is the capital; but the chief trade is from Valparaiso, Concepcion, and Coquimbo. The large island of Chiloe belongs to Chili. The Araucanian Indians possess a considerable territory on the coast of the Pacific between lat. 37° and 49° S.

586. *Patagonia*, in the southern extremity, is inhabited by a tall and vigorous race, who have been falsely represented as giants; but the islands of Tierra del Fuego, which terminate in Cape Horn, are occupied by a meagre



AUSTRALASIA.

587. The remaining portion of the globe is comprehended under the general name of Oceania, which consists of two great divisions, — viz. Australasia, and Polynésia.

AUSTRALASIA.

588. Australasia includes the large islands of Australia, Van Diemen's Land, New Zealand, New Caledonia, New Guinea, New Britain, and New Ireland: with the groups of the Solomon Islands, Queen Charlotte Islands, and the New Hebrides.

589. AUSTRALIA has an area of 3,000,000 square miles, or four-fifths of the magnitude of Europe. It contains some hilly districts in the neighbourhood of the coasts, but the interior appears to consist of low and level plains. The highest mountains are near the south-east coast, and are called the Australian Alps, or Warragong Mountains, the summits of which are 6500 feet above the sea. Further to the north, along the east coast, are the Blue Mountains. The plains of the interior, so far as they have yet been visited, are generally dry and sterile, but there are vast tracts of fertile land — some of them suited for the plough, and others admirably adapted for pasturage, — in the eastern, southern, and south-western parts of the island.

590. Most of the *rivers* of Australia have short courses, and many of them are nearly dried up during the summer. The River Murray, which enters the sea on the south coast of the island, is of considerable length, and drains a large extent of country, being joined by the Lachlan, the Murrumbidgee, the Darling, and other streams. In its lower course it has a great volume of water, but immediately above its mouth it passes through a large shallow lake, named Lake Alexandrina.

591. The *Climate* of Australia is, in general, dry and healthy: the northern parts, which are within the tropics,

portions of the country the average degree of heat is not greater than that which prevails in the south of Europe. The rains are often irregular, and long periods of drought sometimes occur, while at other seasons the rain falls with great violence.

- 592. Both in its vegetable and animal productions, Australia presents striking differences from the other divisions of the globe. The native trees are all evergreens, and the forests consist principally of acacias, gum-trees, and gigantic ferns: grasses are abundant, but there are no native fruits capable of being used as food, except a few berries. All the principal food-plants and fruits of Europe have, however, been introduced, and are cultivated with success. The largest native animal is the kangaroo, but the domestic quadrupeds of Europe, including horses, oxen, and sheep, are now reared in vast numbers.

593. The native people of Australia belong to the black race (see page 13), but they are few in number. The white population, which consists almost entirely of British settlers, amounts to upwards of 1,000,000.

594. The settled portions of Australia embrace five distinct colonies, all of which belong to Great Britain: — these are — New South Wales, Victoria or Port Phillip, South Australia, Western Australia, and Queensland.

595. *New South Wales* occupies part of the east coast, with a large portion of the interior, and is a highly flourishing colony. It is the oldest of the Australian colonies, and was originally founded in the year 1788, as a penal settlement. The transportation of offenders to New South Wales has, however, been discontinued for several years past. The chief attention of the colonists is devoted to the rearing of sheep, and wool is the staple produce of the country: the whale-fishery is also carried on, and its produce exported. Gold occurs in the district of Bathurst, and in other parts of the colony. The chief town is Sydney, situated on the inlet of Port Jackson, with 100,000 inhabitants.

596. *Victoria, or Port Phillip*, now a separate colony, was, until 1850, only a district of New South Wales. It embraces the southeastern coasts of Australia, with a large interior tract. Large quantities of gold are annually furnished by the rich gold-fields of this province, the attractions of which have occasioned its rapid increase in population and importance. Sheep-farming is extensively carried on, and a great quantity of wool exported. The chief town is

597. *South Australia* is to the west of Port Phillip, and includes the shores of Spencer's and St. Vincent's Gulfs. It is a more agricultural country than any of the other Australian settlements, and excellent wheat is grown. Great quantity of the finest copper is annually exported. The chief town is *Adelaide*, a short distance to the east of St. Vincent's Gulf. The colony of South Australia was founded in the year 1836.

598. *Western Australia* is a region of immense extent, but only the portion adjacent to the south-west coast, and in the neighbourhood of Swan River, is actually settled. This colony was established in the year 1829; but it has been the least successful of the Australian settlements, and has only about 12,000 inhabitants: the principal article of produce is wool. The chief town is *Perth*, on the banks of Swan River; *Freemantle*, at the mouth of that stream, is its port.

599. *Queensland*, which dates its existence as a distinct colony from 1859, was originally a part of New South Wales, and was known as the Moreton Bay district, from the fine inlet of Moreton Bay, which is included within its coast line. The river Brisbane, at the mouth of which the town of Brisbane, the capital of the colony, is situated, falls into this bay. The province of Queensland, from its situation nearer the tropic, has a hotter climate than any other of the Australian settlements. It is well adapted to the growth of cotton.

600. The island of VAN DIEMEN'S LAND, or TASMANIA, separated from Australia by the channel of Bass's Straits, is a British colony. It has 86,000 inhabitants, all of whom are whites, and a large proportion of them convicts. Tasmania is hilly in the interior, well watered, and generally fertile. The principal river is called the Derwent. The climate is milder than that of Australia, and free from the droughts experienced in the latter country. Copper, iron, and other ores, are abundant, and good coal is found. Wheat is largely grown, and wool is exported, besides the produce of the whale fishery. The capital is *Hobart Town*, on the river Derwent: *Launceston*, near the north coast, is also a great seat of trade.

601. *NEW ZEALAND*, to the eastward of Australia, consists of three islands, distinguished as the North Island (or New Ulster), the Middle Island (or New Munster), and the South Island (or New Leinster). The total area of these is nearly 100,000 square miles. The North and Middle Islands are separated by the channel of Cook's Straits; the Middle and South Islands by Foveaux Straits. The interior of New Zealand contains ranges of high mountains: rivers are numerous, and the coasts abound in excellent harbours. The climate is moister than that of Australia, and more resembles that of our own country. The islands abound in valuable timber, the largest kinds of which are from trees belonging to the pine tribe, and the native flax (or *phormium tenax*) yields a fibre of superior tenacity and strength.

602. The natives of New Zealand are a fine, muscular, and athletic race, greatly superior in appearance and social condition to the

and reside in *pahs*, or villages, which are collections of huts, in general strongly fortified with palisades.

603. New Zealand was taken possession of by the British government in 1840; settlements have been made at several places both in the North and Middle Islands, and there are now above 100,000 colonists. The town of *Auckland*, upon the east coast of the North Island, is the seat of government; *Wellington* (on the shores of Cook's Strait) and *New Plymouth* (upon the west coast) are both on the same island. The town of *Nelson* is on the south side of Cook's Strait, in the Middle Island; the Canterbury Settlement was in 1850 established upon the east coast of the Middle Island, in the neighbourhood of Banks's peninsula, where the town of *Lyttleton* has been founded. Further south, on the same coast, is Port Otago, upon which the town of *Dunedin* has been founded by a body of Scotch colonists.

604. *Norfolk Island*, to the N.W. of New Zealand, was for some time used by the British government as a convict station, but this establishment has been abandoned. The *Auckland Islands*, to the southward of New Zealand, were in 1849 made the seat of a station for the prosecution of the British whale-fishery in the Southern Seas.

605. All the remaining countries of Australasia are inhabited by savage races, of whom little is known.

POLYNESIA.

606. This name has been applied to numerous groups of islands scattered over the wide expanse of the South Sea. Though small, they are generally fertile and beautiful, and inhabited by mild but licentious and superstitious tribes. The principal are, —

(1.) The *Society Islands*, of which the principal is Otaheite or Tahiti; celebrated for its progress in the arts, and the polished and engaging manners of the inhabitants. They have been lately converted by the missionaries to the Christian religion, and have been induced to relinquish many revolting and superstitious practices to which they were prone.

(2.) The *Friendly Islands*, of which the principal is Tongataboo, lie to the west of the Society Islands. They are inhabited by a handsome, intelligent, and courteous race of people. The country is well cultivated; but they have not yet adopted many European improvements. The Fidjee Islands, which adjoin them on the south-west, and the Navigators' Islands on the south-east are not so

well known, and are inhabited by much more rude and savage tribes, who are even suspected of feeding on human flesh.

(3.) The *Marquesas*, named sometimes, from their discoverer, the *Islands of Mendana*, lie north from Otaheite. The natives are extremely handsome in their persons, though they disfigure them strangely by puncturing and tattooing. In their clothes, houses, and canoes they are inferior to the Otaheiteans, and have borrowed nothing from Europe.

(4.) The *Sandwich Islands* lie considerably north of the groups now described. They are very mountainous, Mowna Roa being above 16,000 feet high, and there is a large and very formidable volcano. The plains, however, are fertile. The people are finely formed, vigorous, and active; and though, in a fatal conflict with them, Captain Cook lost his life, their general conduct towards the British has been honourable and friendly.

Tamahama, their late king, did much to improve his subjects by the adoption of European arts; and his successor visited England, where he unfortunately died. The people have been converted to Christianity; they have also improved in industry, and have opened a considerable trade with the United States. Owhyhee, Woahoo, and Atooi, are the principal islands. In Woahoo is Honororu, the chief sea-port.

(5.) The *Caroline Islands* form a numerous group in the western part of the Pacific. Hogoleu, Oualan, and Yap, are considerable: the people appear somewhat civilised, and skilled in navigation; but they are little known. The chains of Mulgrave, Wallis, and Radauk, to the eastward, appear only branches of the Carolines. The same may, perhaps, be said of the Pelew Islands, famous for the hospitable reception given there to Captain Wilson's shipwrecked crew, and for the visit of their prince, Lee Boo, to England, where he died.

(6.) The *Ladrone* or *Marianne Islands*, to the north of the Carolines, are beautiful and fertile, but almost deserted, the native inhabitants being few and far between.

the Spaniards have formed only a small establishment there. Guam and Tinian are the principal islands.

607. The Pacific contains long chains of small coral islands of very curious formation. They consist of the well known *calcareous* substance called coral, peopled by numerous insects, which ramifies and becomes encrusted with their shells, until it reaches the surface, and forms low flat reefs or islands. The chief are Gambier's Group, Serle and Bow Islands. Remarkable detached islands are, Easter Island, noted for the intelligence of the natives, and for certain colossal statues early found on it; and Pitcairn's Island, peopled by a body of British seamen who had mutinied on board the *Bounty*. Further east we may notice a recently discovered group, almost covered with ice and snow, named New South Shetland.

Heights
of the Principal
Mountains
of the
WORLD

Feet

McEverest 29000

Kinchin Janga 28174

Dhawalaguri 28090

Jawahir 25760

Aconcagua 23907

Sahama 22350

Chimborazo 21415

Nevado di Sorata 21286

Kilimandjaro 20000

Antisana 19137

Fibrouz 18493

S.Elias 17860

S. de Merida 16420

M. Plane 15750

Abba Jarret 15000

Demavend 14700

Mowna Koa 13645

Tremants Pk 13563

Cameroons 13000

Pk of Tenerife 12300

Mulhacen 11650

Etna 10880

Maravaca 10500

Jesh Sheikh 10000

Colima 9200

MEgmont 8840

Parnassus 8063

M.Washington 6650

Ruivo Pk 6000

Hecla 5210

Ben Nevis 4368

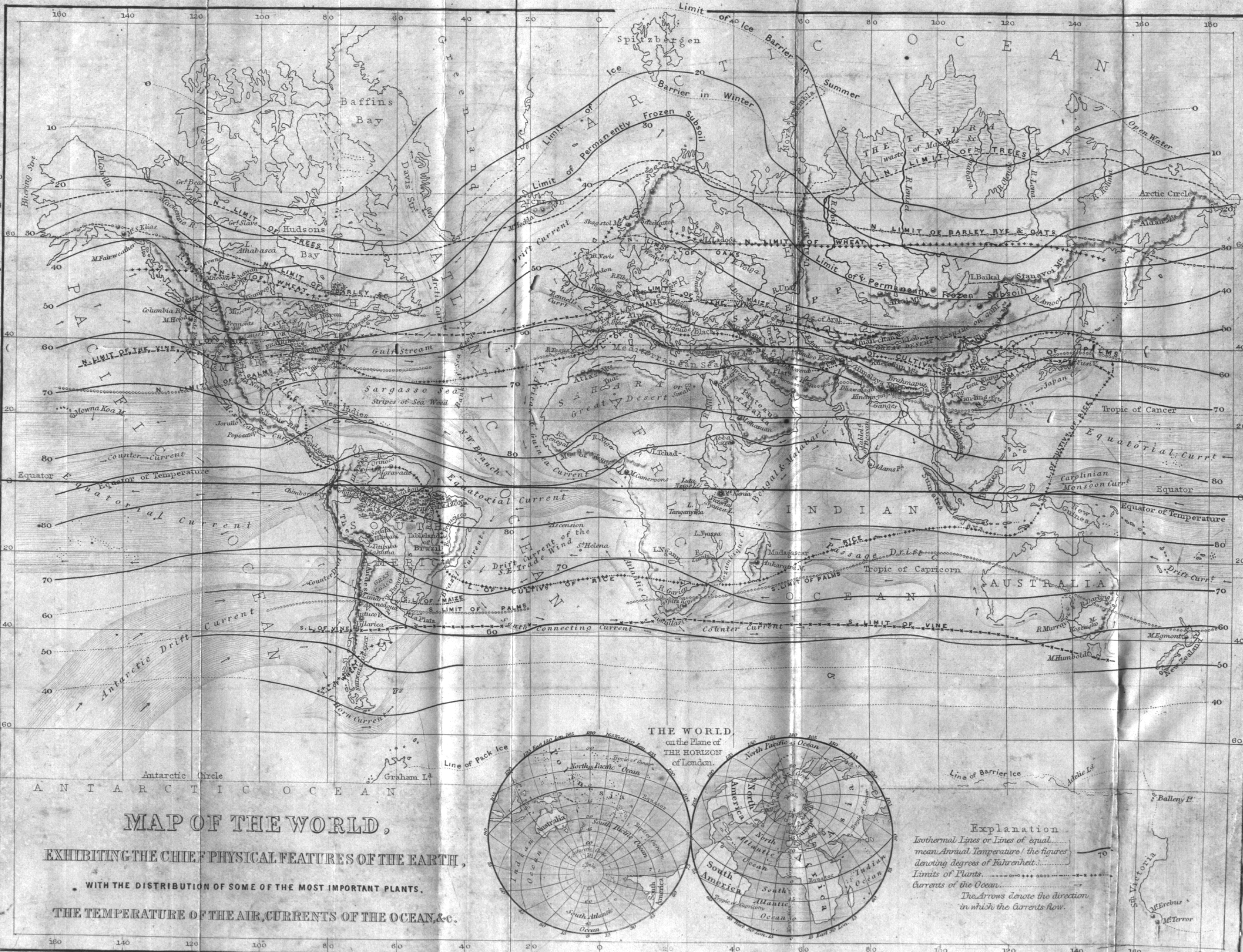
Vesuvius 3632

Snowdon 3571

Carnival 3400

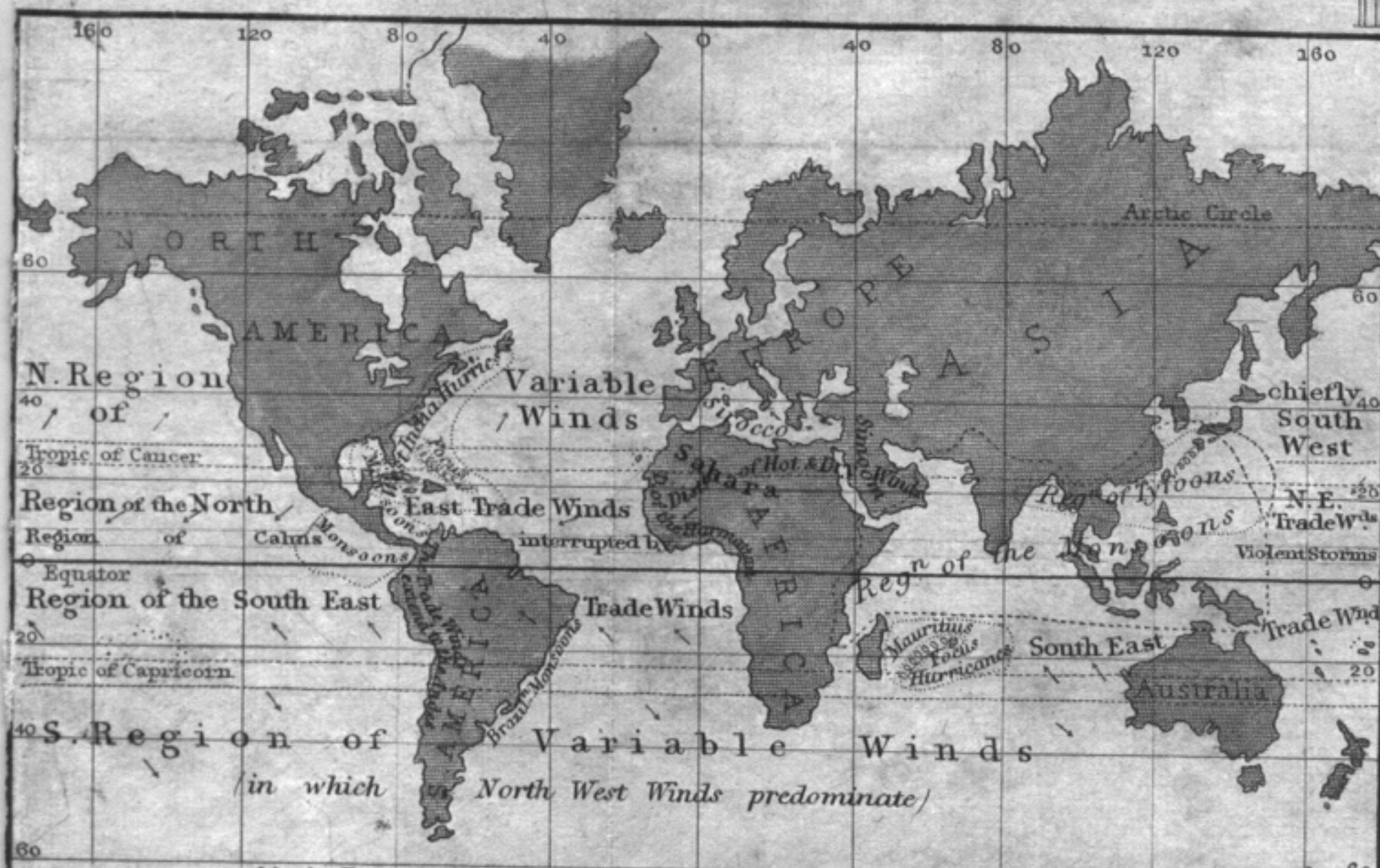
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THE WORLD
on the Plane of
THE HORIZON
of London.

Explanation
Isothermal Lines or Lines of equal
mean Annual Temperature / the figures
denoting degrees of Fahrenheit.
Limits of Plants.
Currents of the Ocean.
The Arrows denote the direction
in which the Currents flow.



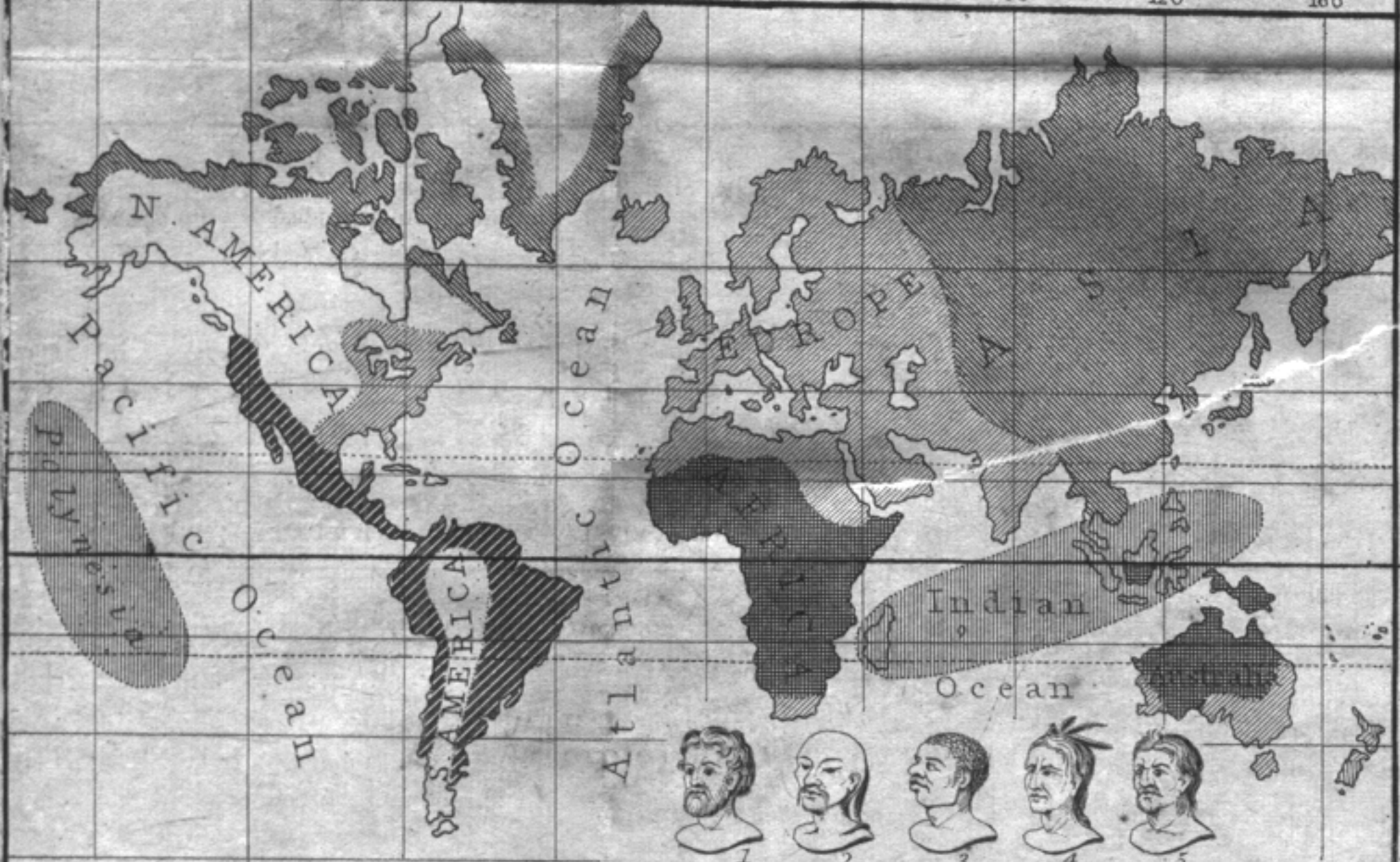
Lengths of the Principal RIVERS of the WORLD

Miles

4200	Mississippi (Missouri Br.)
3600	Nile
	Amazon
3300	Yang-tse Kiang
3000	Niger
2800	Lena
2500	Madeira
2440	Mackenzie
2400	Mississippi (Proper)
2300	Hoang Ho
	Volga
2200	La Plata
2000	S ^t Lawrence
	Brahmaputra
1800	Del Norte
	Indus
1700	Danube
	Euphrates
1600	S ^t Francisco
1560	Orinoco
1500	Ganges
1380	Ohio
1300	Columbia
1200	Dnieper
1140	Senegal
1100	Don
1050	Gariep
1000	Gambia
950	Ural
800	Purus
760	Rhine
700	Elbe
660	Vistula
550	Oder
520	Tagus
440	Seine
315	Po
230	Jordan
215	Thames
190	Shannon

MAP
Shewing the Geographical distribution of the WINDS

Note.
The Districts, within which Hurricanes prevail are surrounded by dots, thus . The arrows indicate the direction of the wind.



MAP
Shewing the present distribution of the Various Races of MANKIND

Note.
Where the Map is striped thus it denotes that the people are of different races.

- Reference.
- 1 Caucasian Race marked thus
 - 2 Mongolian
 - 3 Negro
 - 4 American
 - 5 Malay



MAP
exhibiting the distribution of RAIN over the World

Note.
The Map is shaded darker in proportion as the amount of Rain, which falls annually is greater.

PHYSICAL GEOGRAPHY.

1. In the early pages of this work we alluded to the "Distribution, Form, and general Features of the Land," with the varieties of the human family, (see pages 12. to 14.), and subsequently we described the physical features of each of the great continents together with their mineral, vegetable, and animal productions, and their different races of men. We shall now proceed to notice some of the more important phenomena connected with the dry land, the ocean, and the atmosphere, and which are indicated upon the physical map. We shall then pass on to consider the condition of man in society, and some of the principal productions of the earth which form articles of commerce.

HIGH LANDS OF THE EARTH.

2. *Mountain systems.* — Mountains are the most prominent features of the earth's surface, and are generally distributed in ranges or chains. By inspection of the map of the hemispheres we observe that the mountain ranges lie for the most part in the direction of the greatest length of the continents: in the Old World therefore the ranges run nearly parallel to the equator, whilst in the New World they stretch in the opposite direction. Commencing on the north-east shores of Asia a lofty mountain ridge crosses that continent from east to west, and is continued with few interruptions through Southern Europe to the Atlantic Ocean. The north-east portion

from which a branch called the Central Mountains shoots off into Kamchatka. The great chain is continued in the Yablony or Stanovoi mountains to the central highlands of Asia.

3. The eastern border of this plateau is formed by the Khing-Khan, In-shan, and Yung-ling mountains, which succeed one another in the direction from north to south, and send off into China two spurs called the Pe-ling, and the Nan-ling mountains. The Altai ridge bounds the plateau on the north. The Thian-shan or Celestial mountains, and the Kuen-lun, are supported upon its surface, and the lofty Himalaya forms its southern boundary. Along the western side run the Beloor-tagh mountains, which unite with the Himalaya in the great mountain knot called the Hindoo-Koosh. The highland is then continued westward in the table-lands of Afghanistan and Iran to the Elburz mountains on the south of the Caspian Sea, and thence in the mountains of Armenia and Taurus through the Peninsula of Asia Minor. The lofty range of Caucasus extends between the Caspian and Black Seas. The range is continued westward through Southern Europe, under the name of the Balkhan, the Alps, the Carpathian, the Cevennes, the Pyrenees, and terminates in the western extremity of the Cantabrian chain.

4. Several ranges seem to be unconnected with this great belt of highlands, such as the eastern and western Ghauts, and the Vindhya mountains in the peninsula of Hindoostan, the Ural mountains between Europe and Asia, and the Koelen and Dofrine mountains in the Scandinavian peninsula.

5. In Africa the Atlas mountains stretch along the shores of the Mediterranean. The Kong mountains, Mountains of the Moon (Arab., Jebel Komri), and mountains of Abyssinia occupy the central regions. The Lupata chain (spine of the world) runs through the south-eastern part of the continent, and its southern extremity is surrounded by the Snowy and Table mountains.

the Mackenzie River, and runs southward through North America under the names of the Rocky or Oregon mountains, the mountains of Mexico and Central America, and is continued into South America in the chain of the Andes or Cordilleras.

7. Besides this continuous mountain ridge there are other independent ranges, as the Californian Alps in North America, which run along the north-west shores of and through the peninsula of that name, the Ozark mountains, between the Rocky and Appalachian mountains, the latter of which runs N.E. by S.W. through the United States.

8. In South America the mountains of Parime or Guiana run in a waving line between the Orinoco and the lower course of the Amazon, and several ridges intersect the table land of Brazil.

TABLE-LANDS OR PLATEAUS.

9. This term is applied to level or gently inclined tracts of land considerably elevated above the sea. The most extensive on the globe are as follows :

10. *Asia.* The table-land of Central Asia, which comprises the plateaus of Mongolia (4000 feet), Tibet (10,000 feet), and Pamer (15,000 feet). The centre of this high-land is occupied by the great desert of Gobi or Shamo. The Plateau of Afghanistan and Persia, at an elevation varying from 6000 to 7000 feet. The plateau of the Deccan (3000 feet) in the peninsula of Hindoostan. The table-land of Armenia (7000 feet) in Asiatic Turkey. The table-lands of Asia Minor and Arabia, each of which attains in many places an elevation of 4000 feet.

11. *Europe.* The largest in this continent is the plateau of the Spanish peninsula, which has an elevation on its northern side of about 3000 feet, and on its south of about 2000 feet. The plateau of Bavaria reaches a height of 2000 feet, and the southern extremity of the Scandinavian peninsula presents plateaus of moderate elevation.

12. *Africa.* The Sahara or Great Desert is a plateau

of moderate elevation: the whole of the African continent to the south of the fifth parallel of north latitude is supposed to consist of a vast table-land.

13. *America*.—In North America, the lake district consists of a moderately elevated table-land, and eastward from the base of the Rocky Mountains there are a series of plains stretching eastward for 400 miles towards the valley of the Mississippi. The great table-land of Mexico or Anahuac attains near the city of Mexico a height of 9000 feet, and in Central America the plateaus of Guatemala and Honduras reach an elevation of from 4000 to 6000 feet.

14. In South America among the lofty ridges of the Andes there are plateaus of considerable extent; but the largest of them are that of Quito, under the equator, which is 9000 feet in elevation; that of Pasco between the eleventh and twelfth parallel, 11,000 feet; and that of Potosi or Titicaca, which contains the lake of that name, 12,700 feet above the sea-level.

VOLCANOES.

15. The term Volcano is applied to those mountains which send forth flame, smoke, ashes, streams of melted lava or mud. The principal regions in which active volcanoes occur are the following.

16. *Asia*.—The Aleutian Archipelago, Kamchatka, the Kurile Isles, Japan and the Philippine Islands, the Molucca and Sunda Islands to Barren Island in the Bay of Bengal. In central and south-western Asia there are several traces of Volcanic action.

17. *Europe*.—Vesuvius near to Naples, Etna in the Island of Sicily, and Vulcanello and Chicciola in the Lipari Isles, are frequently in activity. In Iceland there is Hecla and the Geysers or boiling springs.

18. *Africa*.—Traces of volcanic action appear chiefly in the islands. The peak of Teneriffe is a remarkable instance of this.

19. *America*.—In North America. In the peninsula

of California there are five active volcanoes: the West India Islands contain three volcanoes, which are active at intervals. Throughout Guatemala or Central America and Mexico, there are no less than thirty active volcanoes. In South America, the mighty range of the Andes, from latitude 43° south, to about 2° north, exhibits an enormous volcanic system. In this chain no less than forty-six volcanoes have been enumerated, forty-one of which are said to be in action; some of these, as Cotopaxi, Antisana, Tunguragua, and other huge cones, are of prodigious grandeur and of frequent activity. Only one active volcano occurs in Peru, but in Chili there are nineteen active at frequent intervals, one of which (Villarica) burns almost uninterruptedly. Besides the district of active volcanoes, there are several regions which exhibit traces of volcanic energy, as the Western Highlands of Scotland, Central and Southern Germany, Northern and Central Italy, the Italian Islands, Central France, the Western Islands or Azores. In the West Indies, in the Mexican Mountains, and the chain of the Andes, and in several island groups of the Pacific Ocean, as the Banda Isles, New Guinea, New Britain, the New Hebrides, Norfolk Island, and St. Philip, the Friendly, the Society, the Ladrone, and the Sandwich Islands, from the bold and irregular form of their rocky coasts, show that they have been uplifted from the bed of the ocean by the resistless action of fire. In the two latter groups there are two active volcanoes of great elevation.

EARTHQUAKES.

20. Of all the phenomena of nature, earthquakes are the most terrific and destructive. They are of two kinds: —

(1.) One kind, caused by the action of subterraneous agents and the explosion of volcanoes, is felt only at small distances, and always attended by eruptions or openings of the earth.

(2.) Another kind, felt at great distances, is caused by

sive tracts of ground without any eruptions taking place, and is therefore followed by less dreadful consequences.

21. Earthquakes seldom occur in the British islands; but, in 1755, Lisbon was destroyed by one, and they are of nearly annual occurrence in Sicily, and in the West Indian and East Indian islands, and in Mexico and Peru. In the list of mountains the letter (V) attached to the name of any mountain signifies that it is a volcano.

HIGH LANDS OF THE EARTH.

EUROPE.

				Feet.
Mont Blanc	-	- Alps	-	- 15,732
Monte Rosa	-	- "	-	- 15,150
Finster Aar-Horn	-	- "	-	- 14,109
Jungfrau	-	- "	-	- 13,716
Ortler Spitz	-	- "	-	- 12,852
Mulhacen	-	- Grenada, Spain	-	- 11,678
Nethou	-	- Pyrenees	-	- 11,427
Perdu	-	- "	-	- 11,275
Etna (V.)	-	- Sicily	-	- 10,873
Monte Corno	-	- Apennines	-	- 9,523
Sneehactan	-	- Dovre-field, Norway	-	- 8,122
Lomnitz	-	- Carpathian	-	- 7,962
Punda	-	- Oural, Russia	-	- 6,780
Monte Mezin	-	- Cevennes	-	- 6,567
Puy de Sancy	-	- Auvergne	-	- 6,215
Hecla (V.)	-	- Iceland	-	- 5,210
Ben Nevis	-	- Scotland	-	- 4,368
Vesuvius (V.)	-	- Italy	-	- 3,978
Snowdon	-	- Wales	-	- 3,500
Stromboli (V.)	-	- Lipari Isles	-	- 3,020

ASIA.

Mount Everest	-	- Himalaya	-	- 29,002
Kunchinjing	-	- "	-	- 28,174
Dhawalagiri	-	- "	-	- 26,826
Elburz	-	- Georgia	-	- 18,493
Ararat	-	- Armenia	-	- 17,260
Peak of Demawund	-	- Persia	-	- 14,700
Kasibek	-	- Georgia	-	- 14,400
Ophir	-	- Sumatra	-	- 13,840
Mowna Koa	-	- Sandwich Isles	-	- 13,645
Italitzkoi	-	- Altai chain, Tartary	-	- 10,735
Lebanon	-	- Palestine	-	- 9,600

				Feet.
Awatsha	-	-	Kamchatka	- 9,600
Egmont	-	-	New Zealand	- 8,840
Bithynian Olympus	-	-	Anatolia	- 6,500
Sea View Hill	-	-	New South Wales	- 6,500

AFRICA.

Kilimandjaro	-	-	Jagga	- 20,000 ?
Geesh	-	-	Abyssinia	- 15,000
Peak of Teneriffe	-	-	Canary Isles	- 12,180
Miltsin	-	-	Barbary	- 11,400
Clarence Peak	•	-	Fernando Po	- 10,625
Table Mountain	-	-	Cape of Good Hope	- 3,582
Diana's Peak	-	-	St. Helena	- 2,692

AMERICA.

Aconcagua	-	-	Andes	- 23,910
Sahama	-	-	"	- 22,350
Chimborazo	-	-	"	- 21,415
Nevada di Sorata	-	-	"	- 21,286
Nevada d'Illimani	-	-	"	- 21,145
Antisana	-	-	"	- 19,136
Cotopaxi (V.)	-	-	"	- 18,867
Mount St. Elias	-	-	Russian America	- 16,775
Popocatepetl (V.)	-	-	Mexico	- 17,773
Fremont's Peak	-	-	Oregon	- 13,568
Silla de Caraccas	-	-	Venezuela	- 8,633
Blue Mountains	-	-	Jamaica	- 7,278
Mount Washington	-	-	Appalachians	- 6,650
Itacolumi	-	-	Brazil	- 5,756
Saddle Mountain	-	-	Massachusetts	- 4,000

ANTARCTIC CONTINENT.

Mount Erebus and Mount Terror	-	-	-	- 10,000
Mountains in Adelie Land	-	-	-	- 1,500

22. In the annexed list, the elevation of several remarkable localities are stated, with some of the highest altitudes occupied by man, and reached by him.

	Feet.
Ascent of Mr. Glaisher, at Wolverhampton, in 1862, being the greatest height ever attained by a balloon	- 32,000
Greatest altitude attained by MM. Humboldt and Bon-	

	<i>Feet.</i>
Highest flight of the condor on the Andes - - -	21,000
Mannering Pass, in the Himalaya, crossed by Captain A. Gerard - - - - -	18,612
Absolute height of a village in the Himalaya visited by Gerard, perhaps the highest inhabited spot on the globe -	13,500
Farm of Antisana, the highest inhabited spot on the Andes -	13,435
Manasarooa Lake in Thibet - - - - -	15,200
Milum Temple, near the source of the Ganges - - -	13,000
Greatest altitude of the peach, apricot, and walnut, growing luxuriantly in the Himalaya - - - - -	9,000
Thick woods of pines and birch trees in the Himalaya, the latter attaining a large size - - - - -	14,000
Bushes seen in the Himalaya - - - - -	17,000
Absolute elevation of poplars found by Gerard in the Himalaya, twelve feet in girth - - - - -	12,000
Highest point of road across the Andes - - - - -	11,499
Elevation of the city of Quito, in South America - - -	9,542
Elevation of Santa Fé de Bogota - - - - -	8,727
Elevation of the city of Mexico - - - - -	9,000
Highest pass in Europe, that of the Cervin, over the Pennine Alps - - - - -	11,096
Highest constructed road in Europe, the pass of the Ortler Spitz - - - - -	9,100
Pass of the Col de Tende over the Maritime Alps - - -	5,887
Pass of Mount Cenis over the Graian Alps - - - - -	6,773
Pass of the Simplon over the Pennine Alps - - - - -	6,578
Highest inhabited spot in Europe, the convent of St. Bernard	8,606
Convent of St. Gothard - - - - -	6,900
Mine of Real del Monte in Mexico - - - - -	9,120
Highest growth of Peruvian bark - - - - -	9,590
Lake Lucon, in Switzerland - - - - -	6,220
Residence of Bonaparte in St. Helena, Longwood House -	1,730
Lake of Geneva - - - - -	1,207

LOWLAND PLAINS.

23. Lowland plains are, for the most part, only slightly elevated above the level of the sea. The plains of the old continent present great variety of surface; some are gently waving, others prominently undulating; some again are studded with hills, traversed by valleys, or intersected by ravines. In the American continent, the plains present a more perfectly level and horizontal sur-

24. *European plains.* — The principal are:— 1. The great plain which extends from the shores of the German Ocean to the base of the Ural mountains, comprehending Northern France, Holland and Belgium, Northern Germany, the greater part of Prussia, and the whole of European Russia. The only elevations upon this vast level are the Valdai hills, 1119 ft. high. 2. The plain of Hungary is of considerable extent, and abounds with marshy tracts termed *Puszta*.

25. *Asiatic plains.* — These are described on pages 77 and 78.; the African plains on page 113., and the plains of America on pages 132 and 133.

VALLEYS.

26. Valleys are the spaces lying between opposite ranges of mountains or hills; their lowest part is generally the watercourse of some river or torrent which takes its rise in the higher grounds. Valleys occur in almost endless variety: some are broad and open, being formed by the gentle slope of the elevated lands on either side; others are long and narrow, and completely enclosed on all sides by precipitous rocks: others again are basin-shaped, or of a circular form, surrounded by a girdle of mountains. Those depressions, resembling large clefts or fissures, which occur in mountainous districts, are arranged into two classes, termed longitudinal and transverse valleys; the former separate the principal parallel ranges, and follow the general direction of the chain; the latter run at various angles with the principal range. Valleys situated among steep mountains are sometimes difficult of access, ingress and egress being obtained only by narrow entrances called ravines, gorges, defiles, or passes.

DESERTS.

27. The term desert, in its original sense, means an uninhabited place, and is therefore applicable to many

regions conspicuously gifted with natural fertility : it is now, however, used in geography to denote sterile tracts, which are occupied by stony or sandy plains, and rendered by the nature of their soil, their want of water, or other causes, unfit for the permanent and settled abode of man. Desert plains, that is, dreary solitudes of stony and sandy wastes, rarely occur in the New Continent, but they occupy an enormous portion of the Old Continent ; even some of the best cultivated plains of Europe contain patches of sand of more or less extent. On the western coast of Africa an immense girdle of desert land commences and extends through North Africa, Arabia, Persia, and Central Asia, nearly to the Pacific Ocean. This vast expanse of irretrievable desolation is, for the most part, covered with loose shifting sand, which the wind raises into hillocks, that are constantly changing **their position, and threatening to overwhelm the traveller who may venture across these trackless regions.** In some places, the surface consists of hills of considerable magnitude, composed of dark and barren limestone rock ; in others, beds of gravel appear, furrowed and worn by winter torrents, which descend from the higher regions. The more level tracks frequently consist of plains formed of a clayey soil, thinly covered with a short and coarse grass ; these often contain extensive salt lakes and marshes, which supply salt in such abundance as to constitute an article of traffic. The most extensive deserts in the world are mentioned in the description of the continents : they are also indicated upon the physical map.

RIVERS AND LAKES.

28. Rivers are currents of water flowing into open channels through the land. They are formed by brooks and rivulets, whose collected waters they pour into the ocean, or some great inland lake. The whole extent of country drained by a river, that is, the whole of the slopes which contribute their waters to the formation of a river, is called its hydrographical region, district, or *basin*.

The margin of land separating one basin from another is called the *water-parting* or *water-shed*; this, in some cases, is a mere ridge-line like the top of a house-roof, from which the waters diverge and flow down in opposite directions. It sometimes happens that opposite basins are connected by natural canals. The most remarkable instance of this kind is the *bifurcation* or forking of the Orinoco, which sends a portion of its waters by the Cassiquiare river into the basin of the Amazon. By the *bed* of a river, is meant the channel which it has excavated for itself; and its *course* signifies the direction in which it flows. Large rivers having their sources in elevated regions, are generally divided into the *upper*, *middle*, and *lower* courses. The alluvial soil held in suspension by rivers gradually settles down as the currents slacken, and forms portions of land, termed *Deltas*, so called from their triangular shape, resembling the Greek letter Δ .

29. At the mouths of the Ganges, Nile, Volga, Rhine, Mississippi, and Orinoco, there are large Deltas, and those of the Brahmaputra, Po, and Rhone, are of considerable extent; there are deltas, also, in the Adige, Brenta, Isonzo, and Tagliamento.

30. The velocity of a river depends upon its volume of water, the form of its channel, the slope of its bed, and the nature of its windings, which cause the stream to be retarded by impinging against its banks.

31. The *development* of a river is its length from its source to its mouth, including all its turnings. A sudden change in the level of the bed of a river produces a rush or fall of water, which, at a moderate inclination, is called a *rapid*; if it approaches the perpendicular, it is termed a *cataract*. Falls formed by rivulets, or mountain torrents, receive the name of *cascades*.

32. Tidal rivers are those which fall into tidal seas, and have the level of their lower course, for some distance, changed daily by the tidal wave. In certain rivers, at spring-tides, the phenomenon of the *bore* is to be seen. This is a wave which, in some places, comes rolling in with the first of the flood, and, rising to the height of from

five to fifteen feet above the level surface of the river, with a foaming crest, rushes onward, threatening destruction to boats, and even to shipping. At the mouth of the Garonne it is called the *mascaret*. At the junction of the Tigris and Euphrates it is called *bar*.^{*} In the Hooghly, one of the mouths of the Ganges, it is known as the *bora*, and in the Amazon it bears the name of the *rollers*, but by the Indians it is called *pororoca*.

33. The magnitude of rivers depends upon the length of their courses, the area of their basins, the number of their affluents, the rain-producing character of the climate, and their connection with lofty ice-clad mountains or table-lands. Most of the large rivers have their head waters in mountainous regions. The small rills that trickle down from the tops and sides of mountains, generally unite their waters and form streams; the streams, again, roll through the chasms or deep rocky recesses of the mountains, or leap over precipices, forming in their descent every variety of waterfall: rolling on into the valleys, they join and form rivers, enriching and fertilizing the country through which they flow, till they meet the ocean, and there expand into broad estuaries, that become the channels of extensive commerce.

34. Oceanic rivers are those which pour their accumulated waters into the sea. The Pacific, though the largest ocean of the globe, has but few rivers of long courses, falling into its immense basin; the basins of the Atlantic, Arctic, and Indian Oceans, receive most of the continental streams, — some of the mightiest floods discharging their waters into these vast recipients.

35. Continental rivers are those which never reach the ocean, but fall into lakes unconnected with it, or are absorbed and lost in swamps, marshes, or sandy deserts.

I. RIVER SYSTEMS OF THE GREAT CONTINENTS.

36. Upon referring to the Map, we observe, that though Europe is one of the smallest divisions of the earth, yet it enjoys throughout its whole surface the benefit of a

well-developed river system. Asia sends forth in all directions large river-veins from its mountain regions, but its great central table-land is scantily supplied with water, and Arabia is nearly destitute of this necessary of life. •

37. Africa is less favoured with running water than any of the other divisions of the earth; this may be accounted for, partly by the position, elevation, and extent of its great southern table-land. The drainage of America is on a most splendid scale; numerous rivers spread themselves over its western and central regions, and there uniting, roll on with the majesty of seas to the ocean.

38. *The course* or direction of rivers depends upon the distance the highlands, in which they take their rise, are from the sea, together with the geological nature of the country through which they flow. The direction of the course of rivers is generally at right angles to the mountain chains from which they flow; thus the Indus, Ganges, and Brahmaputra, flow at right angles to the Himalayan chain, and the Siberian rivers in a similar direction from the central regions of Asia; several of the European rivers follow this law, as also the African rivers,—the Nile and Niger. In America, almost all the rivers, with the exception of the Rio Colorado and the Magdalena, flow at right angles to the great mountain chains.

39. All rivers within or adjacent to the Torrid Zone, such as the Ganges, Niger, Orinoco, and Amazon, have their floods at very regular periods; they begin to swell about the 25th of March, and arrive at their full, and begin to decrease about the 25th of August. There is a remarkable contrast between the rivers that roll through the great American plain, and those that traverse the Asiatic northern level, though they have their head-waters about the same distance from the equator. The great tributaries of the Mississippi become gradually unlocked from ice, one by one, in the direction from south to north, and have their sources opened last; were the whole of these tributaries to be opened by the action of the sun at

sweep every thing, animal and vegetable, from the surface of the plain. The head-waters of the Siberian rivers are first opened by the solar influence, and being checked by the ice still binding their lower course, burst forth, inundating the plains for several miles on either side of their banks.

40. The river systems of Asia, though on a more splendid scale, somewhat resemble those of Europe; the Ebro may be compared with the Euphrates, the Rhone to the Indus, the Po to the Ganges, and the Grecian streams to those of the Malayan peninsula.

II. LAKES.

41. Lakes, generally speaking, are numerous in high latitudes and in certain elevated regions. They may be classed into four distinct kinds: the first class embraces those small lakes which have no outlet, and receive no running water; some of these appear to be the water-filled craters of extinct volcanoes. The second class consists of those which have an outlet, but receive no running water. The third is the most numerous, and embraces all those which both receive and discharge streams, such as Lake Baikal, and the Canadian lakes, — Superior, Michigan, Huron, Erie, and Ontario. The fourth class is most singular; it comprises all those lakes which receive streams, but have no visible outlet.

42. The water of lakes is generally fresh, and, especially in those which occur in hilly regions, clear and sweet, so as to be capable of supplying the domestic wants of man. But those which belong to the fourth class form a striking exception, as the water of such is almost always salt, in some cases to a degree of intensity which greatly exceeds that of the ocean. The Dead-Sea, in Palestine, is among the most striking examples of this, the saline particles contained in its water amounting to nearly 25 in every hundred; while the proportion of salt in sea-water does not in general exceed 3 or $3\frac{1}{2}$ per cent. of its weight.

*PRINCIPAL RIVERS OF THE GLOBE.

Rivers.	Locality.	Rise.	Discharge.	Length in Eng. miles.
Amazon, or Maranon	Brazil	Lake Lauricocha, in the Andes	Atlantic Ocean	3900
Amour	Manchouria	Plateau of Mongolia	Gulf of Tartary	2300
Brahmaputra	Assam	Plateau of Tibet	Bay of Bengal	1500
Clyde	Scotland	Lowther Hills	Atlantic Ocean	98
Colorado	United States	Rocky Mountains	Gulf of California	840
Congo, or Zaire	Africa	Unknown	Atlantic Ocean	800
Danube	Germany	Black Forest, or Schwarz Wald	Black Sea	1630
Dnieper	Russia	Great European plain	Black Sea	1200
Dniester	Russia	Carpathian Mountains	Black Sea	700
Don	Russia	Great European plain	Sea of Azov	1100
Douro	Spain	Table-land of Spain	Atlantic Ocean	460
Dvina	Russia	Valdai Hills	Baltic Sea	550
Dvina (Northern)	Russia	Great European plain	White Sea	760
Ebro	Spain	Cantabrian Mountains	Mediterranean Sea	420
Elbe	Germany	Harz Mountains	North Sea	690
Euphrates	Asiatic Turkey	Plateau of Armenia	Persian Gulf	1780
Forth	Scotland	Southern Grampians	German Ocean	60
Gambia	Senegambia	Mountains of Western Africa	Atlantic Ocean	550
Ganges	Hindoostan	Himalaya Mountains	Bay of Bengal	1460
Garonne	France	Pyrenees	Bay of Biscay	350
Glommen	Norway	Scandinavian Mountains	Skager-rack	400
Godavery	Hindoostan	Ghauts	Bay of Bengal	750
Göta	Sweden	Lake Wener	Kattegat	58
Grande del Norte	Mexico	Rocky Mountains	Gulf of Mexico	1500
Guadalquivir	Spain	Table-land of Spain	Atlantic Ocean	290
Guadiana	Spain	Table-land of Spain	Atlantic Ocean	450
Hoang-Ho	China	Kuen-lun Mountains	Yellow Sea	2600
Hudson	United States	Saranak Hills	Atlantic Ocean	325
Humber :				
Ouse	England	Pennine Chain,	} German Ocean	{ 150
Trent	England	Staffordshire Moorlands		
Indus	Hindoostan	Plateau of Tibet	Indian Ocean	1700
Irawady	Birmah	Plateau of Tibet	Bay of Bengal	1200
Jihon, or Oxus	Turkestan	Plateau of Pamir	Sea of Aral	1300
James River	United States	Alleghany Mountains	Atlantic Ocean	350
Jordan	Palestine	Mountains of Lebanon	Dead Sea	106
Kizil-Irmak (Halys)	Asiatic Turkey	Plateau of Asia Minor	Black Sea	680
Kistnah, or Krishna	Hindoostan	Ghauts	Bay of Bengal	700
Kouban	Circassia	Mount Caucasus	Black Sea	480
Kour	Georgia	Plateau of Armenia	Caspian Sea	560
Lena	Siberia	Altai Mountains	Arctic Ocean	2400
Loire	France	Cevennes Mountains	Bay of Biscay	570
			Atlantic Ocean	2160

Rivers.	Locality.	Rise.	Discharge.	Length in Eng. miles.
Magdalena	New Granada	Andes	Caribbean Sea	860
May-kiang	India beyond Ganges	Plateau of Tibet	Chinese Sea	2000
Meinam	Ditto	Mountains of Yunnan	Gulf of Siam	800
Mersey	England	Pennine Chain	Irish Sea	170
Meuse	Belgium	Plateau of Langres	German Ocean	550
Mississippi	United States	Lake Itasca	Gulf of Mexico	2400
(by Missouri branch)	United States	Rocky Mountains	Gulf of Mexico	4000
Murray	Australia	Warragong Mountains	Encounter Bay	1280
Niger, or Quorra	Central Africa	Kong Mountains	Gulf of Guinea	2200
Nile	Nubia and Egypt	Table-land of Southern Africa	Mediterranean Sea	3500
Obi	Siberia	Altai Mountains	Arctic Ocean	2530
Oder	Germany	Hercynian Mountains	Baltic Sea	550
Orange, or Gariep	South Africa	Mountains of S. Africa	Atlantic Ocean	1050
Oregon, or Columbia	United States	Rocky Mountains	Pacific Ocean	1200
Orinoco	Venezuela	Mountains of Guiana	Atlantic Ocean	1200
Plata, de la (Parana branch)	South America	Mountains of Brazil	Atlantic Ocean	2350
Po	Italy	Alps	Mediterranean Sea	450
Potomac	United States	Alleghany Mountains	Atlantic Ocean	400
Rhine	Germany	Alps	German Ocean	760
Rhone	France	Alps	Mediterranean Sea	400
Sacramento	California	Sierra Nevada	Pacific Ocean	420
St. Lawrence	Canada	Riv. St. Louis, west of L. Superior	Gulf of St. Law- rence	2000
Scheldt	Belgium	Plain of Northern France	German Ocean	250
Seine	France	Plateau of Langres	English Channel	430
Senegal	Senegambia	Mts. of Western Africa	Atlantic Ocean	900
Severn	Wales	Welsh Mountains	Bristol Channel	240
Shannon	Ireland	Mountains of Cavan	Atlantic Ocean	224
Sihoon, or Sir	Turkestan	Mts. of Central Asia	Sea of Aral	1000
Susquehanna	United States	Alleghany Mountains	Atlantic Ocean	500
Tagus	Spain	Table-land of Spain	Atlantic Ocean	510
Tees	England	Pennine Chain	German Ocean	75
Terek	Russia	Mount Caucasus	Caspian Sea	300
Thames	England	Cotswold Hills	German Ocean	215
Tiber	Italy	Apennines	Mediterranean Sea	210
Tigris	Asiatic Tur- key	Plateau of Armenia	Persian Gulf	1080
Tweed	Scotland	Lowther Hills	German Ocean	96
Tyne	England	Pennine Chain	German Ocean	70
Vistula	Poland	Carpathian Mountains	Baltic Sea	630
Volga	Russia	Valdai Hills	Caspian Sea	2200
Wear	England	Pennine Chain	German Ocean	60
Weser	Germany	Hercynian Mountains	German Ocean	380
Yang-tsze- kiang	China	Kuen-lun Mountains	Yellow Sea	3200

PRINCIPAL LAKES,

WITH THE AREA IN ENGLISH SQUARE MILES.

	Sq. Miles.		Sq Miles
Windermere	10	Koko-nor	1,500
Lomond	43	Baikal	14,800
Neagh	156	Tong-ting	2,000
Geneva	240	Demba	1,400
Constance	228	Chad	15,000
Balaton	250	Dibbie	650
Wener	2,136	Great Bear L.	10,000
Wetter	840	Great Slave L.	12,000
Ladoga	6,330	Athabasca	3,000
Onega	3,280	Winnipeg	9,000
Dead Sea	360	Superior	43,000
Urumiyeh	1,800	Michigan	13,500
Caspian Sea	130,000	Huron	16,500
Aral	26,000	Eric	11,000
Zurrah	1,100	Ontario	12,600
Balkash	7,000	Nicaragua	3,260
Zaisan	1,000	Maracaybo	5,000
Tengri-nor	1,800	Titicaca	3,800

THE OCEAN.

43. That vast body of water, termed the *Ocean*, which surrounds the dry land and penetrates its coast, covers nearly three-fourths of the surface of the globe. The bed of the ocean, like the surface of the land, is diversified by hills, mountains, valleys, and plains.

44. The chief chemical and physical peculiarities of its waters are their *colour*, *saltness*, *temperature*, *depth*, and *level*, with their *waves*, *tides*, and *currents*.

45. *The colour* of the sea is generally of a deep bluish green, which becomes clearer and brighter towards the coasts. The colour in some parts depends upon local causes; thus a purple tint is said to pervade the waters in the eastern part of the Mediterranean sea. In the Gulf of Guinea the sea is white, and around the Maldives it is black. Between China and Japan it is yellowish; and west of the Canaries and Azores it is green. Off California the Vermilion Sea is so named from the colour

it often assumes. At the mouth of the La Plata, the sea is of a reddish tinge; and of a similar colour in the Red Sea, whence its name. Changes of colour are sometimes caused by the nature of the soil, or by the infusion of certain earthy substances in the water: Green and yellow shades frequently proceed from the existence of marine vegetation at or near the surface.

SALTNESS OF THE SEA.

46. Sea-water is salt; and, except the Caspian and some other inland seas, whose waters are brackish, the waters of lakes and rivers are mild, sweet, and fit for human purposes.

(1.) Salt is one of the elementary principles in nature, and is mixed, in greater or less quantities with all other substances. All rivers that run into the sea carry some salt with them; but ~~no rivers run out of the sea~~, nor is any water taken out of it, except by exhalation and evaporation; and no salt ascends in either of these ways: it has consequently been inferred, without supposing great beds of salt originally deposited in the bottom of the sea, that the immense number of rivers which run into it carry with them a sufficient quantity of salt to give to the whole body of waters of the deep that saltiness which, with their motions and currents, preserves them from putrefaction.

(2.) It is obvious that no salt ascends from the sea, because rain water, which falls from the clouds, is the sweetest, purest, and lightest of all waters.

(3.) Hence many contrivances have been adopted for distilling sea-water at sea for ordinary use on ship-board; and hence the pits or pans for making salt on many coasts of the sea.

47. *Temperature.* — Water being a slow conductor of heat, absorbs and gives it out less freely than the atmosphere; its temperature therefore is more uniform and is not subject to those rapid changes which take place in the atmosphere.

48. Very little is known concerning the temperature

of the ocean at great depths, but from the few experiments that have been made, it has been ascertained to decrease with the depth in temperate zones, and to increase with the depth in high latitudes.

49. The temperature of the ocean in low latitudes is considerably modified by the ice drifted by the polar currents from the Arctic and Antarctic Seas.

50. *Depth.* — No certain conclusions have been formed with respect to the depth of the ocean; all we know is that it varies from a few feet to several miles. In the North Sea, Lord Mulgrave sounded to the depth of 4680 feet without reaching bottom. Off the coast of Greenland, Captain Scoresby sounded with a line of 7200 feet with the same result. And 300 miles to the east of Cape Farewell, in Greenland, Captain Parry found no bottom with a line of 6120 feet.

51. The greatest depth ever sounded was that by Captain Sir James Ross, in $15^{\circ} 3' S.$ lat. and $23^{\circ} 14' W.$ long., where a line of 27,600 feet (nearly $5\frac{1}{4}$ miles) was let down without finding bottom, — a depth equal in height to some of the most elevated peaks of the Himalaya.

52. *Level.* — The ocean is presumed to have everywhere an uniform surface, which is called the *level of the sea*: some of its branches form an exception to this rule, their waters being sometimes raised by prevailing winds and currents.

WAVES.

53. Waves are produced by any cause which disturbs the equilibrium of the particles of a fluid. The ocean exhibits two kinds of waves; one called the *sea-wave*, which is produced by the friction of the wind; the other, termed the *tide-wave*, is raised by the attractive influences of the sun and moon. The height of the former in open seas depends upon the force of the wind, and the angle at which it impinges upon the surface of the water, but in confined places the heights and forms of waves are affected by the resistance of the sea-bottom and the character of the shores. The elevation of the tide-wave

depends upon the relative positions of the sun and moon with respect to the earth.

54. Besides the agitation by the waves, the ocean is subject to an undulation called the *ground-swell*, which continues to heave the bosom of the mighty deep long after it has been roused by the distant storm or the hurricane.

TIDES.

55. Those regular motions of the sea, according to which it ebbs and flows twice in *twenty-four* hours, are called the TIDES.

(1.) When the sea, in its flow, has risen for about six hours, it remains, as it were, suspended and in equilibrio for some minutes; and at that time it is called *high water*.

(2.) When, in its ebb, the sea has fallen for about six hours, it remains in like manner, as it were, suspended and in equilibrio; and at that time it is called *low water*.

56. The tides are occasioned chiefly by the attraction of the moon, by which the water is raised upwards in those parts of the sea to which that luminary is opposite. (See plate, p. 250.)

(1.) The tides are greatest at the new and full moons, and are called *spring tides*; they are least at the first and third or last quadratures, and are called *neap tides*: the highest tides are near the times of the equinoxes.

(2.) When the moon is in the northern hemisphere, and in the meridian above the horizon, it produces a greater tide than when it is in the meridian below it; and, when in the southern hemisphere, the reverse is the case.

(3.) For the same reason, when the moon is in the southern signs, the greatest tides on the other side of the equator will be when it is below our horizon; and when it is above it, the tides will be least.

57. *Progress of the tide-wave.*—In order that the phenomena of the tides at different places may be readily compared together, charts of co-tidal lines have been constructed, on which the time of high water at certain

a chart is this: suppose the sun and moon to be on the same meridian, which is the case at new or full moon, spring-tide will then be produced. Now let us suppose that the coincidence of the actions of these luminaries in conjunction or opposition takes place at 12 o'clock (say on Monday), and at that instant the waters of the Pacific to the east of Van Dieman's Land, say about the meridian of 155° E. long., are sweeping under the moon: an initial impulse will then be communicated to the mass of waters and a wave raised, which following the motion of the moon, will proceed westward and bring high water on the coast of Van Dieman's Land at midnight. The wave now travels northward and westward, and is off the Peninsula of Hindoostan at noon on Tuesday, and at 1 o'clock is off the Cape of Good Hope. It then enters the Atlantic, and, moving continuously northward, brings high water successively to all the ports on the western shores of Africa, and eastern shores of America, reaching Cape Blanco on the west of Africa, and Newfoundland on the American continent, at midnight of Tuesday. Then turning eastward, it reaches the coast of France and the mouth of the channel about 4 o'clock the next morning. Proceeding along the western shores of Ireland and Scotland, it passes round the north of Scotland bringing high water to Aberdeen at noon on Wednesday. From this point it proceeds slowly, taking 12 hours to reach the mouth of the Thames, which it does at midnight of Wednesday.

CURRENTS.

58. The causes which disturb the equilibrium of the ocean, producing in it streams of various extent, magnitude, and velocity, are, the influence of tides and of winds,—the expansion and contraction of water by heat and by cold,—the evaporating power of the sun,—and the revolution of the earth about its axis.

59. Another cause of oceanic currents is the evaporation

tract of the ocean, are carried to some other, where the vapour is condensed and falls in the form of rain; this, in flowing back to restore equilibrium, causes sensible currents.

60. In consequence of some one or all of these forces, the waters of the ocean are put in motion, and two great currents perpetually set from each pole towards the equator. The existence of these is proved by masses of ice floating from the frigid to the temperate regions. Icebergs drifted from the North Pole have been met with at the Azores, and from the South Pole they have come even to the Cape of Good Hope. When these currents set out from the poles, they move directly towards the equator, but are gradually deflected in moving from regions where the rotatory motion of the earth's surface is very slight when compared with that at the equator, where it revolves at the rate of upwards of 1000 miles an hour: here the waters cannot immediately acquire the rapid motion with which the solid parts of the earth revolve; hence, the whole surface of the ocean for about 30 degrees on each side of the equator is left behind; or, in other words, it has a general movement from east to west, which produces all the effect of a current in that direction, and this effect is further increased by the constant blowing of the Trade-winds.

61. This great oceanic current originates in the immense expanse of the Antarctic Ocean (see Map): first moving in a north-easterly direction, it reaches the American shore; a small branch rounds Cape Horn, but the great stream flows along the American coast until it arrives off the shores of Peru; it then turns towards the west, and in a belt 3,500 miles broad, called the great Equatorial Current, commences within the limits of the tropics its grand tour of the Pacific Ocean. On reaching the south-eastern shores of Asia, the Indian Archipelago, and Australia, it is broken into numerous smaller streams, but a large volume of water forces its way through the islands, and joins the great equatorial current of the Indian Ocean: as this stream approaches the eastern

shores of Africa, it is again divided by the island of Madagascar; one branch flows round the north of that island, sweeps through the Mozambique channel, where having dashed against the shores of Africa it is joined by the other branch, then doubling the Cape, outside of the Agulhas Bank, it enters the bed of the Atlantic Ocean. Proceeding northward along the western shores of Africa, it mingles with the Great Atlantic equatorial current, which divides into two great branches off Cape St. Roque, in Brazil. One branch sets along the coast of South America, and before reaching the estuary of the La Plata, it is deflected towards the east, and under the name of the South Connecting Current, makes the circuit of the South Atlantic Ocean, entering the Indian Ocean 200 miles to the south of the Cape of Good Hope.

62. The principal branch of the equatorial current of the Atlantic rushes along the coasts of Brazil, Guayana, and Columbia, into the Caribbean Sea; it enters the Gulf of Mexico between the western extremity of the island of Cuba and the peninsula of Yucatan, here it follows the bendings of the Mexican coast from Vera Cruz to the Rio del Norte, and thence to the mouths of the Mississippi. The temperature of the Gulf of Mexico is at least 7° higher than that of the Atlantic under the same parallel. From this reservoir or cauldron of warm water, the most powerful current known, — the *Gulf Stream*, — pours forth at the rate of five miles an hour through the Strait of Florida into the Atlantic Ocean. Flowing in a northeasterly direction, it sweeps along the whole coast of America, and skirts the bank of Newfoundland, where it still retains a temperature of 8° above that of the surrounding sea. Then bending to the east, it crosses the Atlantic, and after flowing nearly 3000 geographical miles, reaches the Azores in about 78 days. It then turns towards the Strait of Gibraltar, the isle of Madeira, and the group of the Canaries, till on reaching the parallel of Cape Blanco, it completes the round by mingling with the grand westerly current of the tropics, about the

waters of the Atlantic between the parallels of 11° and 43° are kept in a perpetual whirlpool, by which a single particle of water describes a great circuit of about 3,800 leagues in the space of two years and ten months. Humboldt says, that "we can estimate from our present knowledge of the swiftness of currents, that this circuit of 3,800 leagues is not terminated in less than two years and ten months."

63. The principal oceanic currents are laid down upon the physical map.

METEOROLOGICAL PHENOMENA.

THE ATMOSPHERE.

64. The atmosphere is that thin fluid which surrounds **the earth on every side, and accompanies it** in its diurnal revolution about its axis and its annual motion round the sun. Being lighter than either land or water, it rises above them, but it is retained by the power of gravity, and held close to the earth's surface for the use of man and the whole animate and inanimate creation.

65. The atmosphere is composed principally of two different sorts of gases, termed *oxygen* and *nitrogen*. *Aqueous vapour* is also present in it, and about 10 parts of carbonic acid gas in every 10,000 of atmospheric air. It is an ascertained fact, that while animals extract from the atmosphere the principle called oxygen and return to it carbonic acid, plants do exactly the opposite; so wonderful is the provision for keeping up the purity of this upper and all-embracing ocean. All animal and vegetable life is dependent upon the atmosphere, and man is equally dependent upon it. It supplies to the lungs the oxygen which purifies the blood, and is the food of common fire, and necessary to the support of flame. It diffuses solar light and heat, and is the vehicle of smell and of sound: the stillness of death would reign throughout universal nature were it not for the atmosphere. Its

nitrogen, and these proportions are preserved throughout the globe we inhabit; a small proportion of carbonic acid also enters into its composition, and there is always present in it more or less aqueous vapour, which descends in the form of rain and dew to fructify and nourish the earth.

66. The height of the atmosphere above the surface of the earth we have no means of accurately ascertaining, but we know that at the height of about 45 miles it ceases to refract the rays of light. It is also known to exert a pressure of about 15 pounds upon every square inch of the earth's surface. When we consider the enormous weight of this medium, which contains the elements of life and destruction, and enfolds the earth as a mantle, we are astounded at its immensity: it is expressed by the sum of five quadrillions, two hundred and eighty-seven trillions, three hundred and fifty billions of tons.

67. This vast aërial ocean, at the bottom of which we live, is *elastic, invisible, transparent, subtile, expansive, and weighty*. It is owing to some of these properties that currents are produced in it, known by the name of *winds*, and which we have now to consider.

OF THE WINDS.

68. The *wind* is air put in motion, either gently or violently; and this is occasioned chiefly by solar heat.

69. Every degree of heat expands air a 480th part; and then the heated air rises, because it is lighter, since there is less air in an equal space when it is warm than when it is cold. The motion of cooler air to supply its place forms the current which we call wind.

70. The sun, while vertical at any place, heats and expands the air; and then, as the earth turns under the sun from west to east, the sun appears to move westward, so that a regular east wind follows the sun, called the trade wind.

from the east and south-east, and these again are varied by land, mountains, changes of seasons, rain, snow, &c.

72. Winds may be divided into *constant*, or those which always blow in the same direction; *periodical*, or those which blow half a year in one direction, and half a year in the contrary direction, which last are called monsoons; and *variable*, which are subject to no rules.

73. *Constant or trade winds.*—The trade wind at the equator blows constantly from the east. From the equator to the northern tropic, or even as far as the parallel 25° or 30° it declines towards the north-east, and the more so the further we recede from the equator. From the equator to the southern tropic, or to the parallel 25° or 30° , it has a south-east direction. The line, however, that separates the opposite trade winds is not precisely the equator, but the second or third parallel north. To a certain extent, **also, they follow the course of the sun, reaching** a little further into the southern hemisphere, and contracting their limits in the north, when the sun is on the south side of the equator, and making a reverse change when he declines to the north. In a zone of variable breadth in the middle of this tract, calms and rains prevail, caused probably by the mingling and ~~ascending~~ of the opposite aërial currents. The phenomenon of the trade winds may be thus explained. The air towards the poles being denser than that at the equator, will continually rush towards the equator; but as the velocity of the different parts of the earth's surface, from its rotation, increases as we approach the equator, the air which is rushing from the north will not continue upon the same meridian, but it will be left behind; that is, in respect to the earth's surface, it will have a motion from the east; and these two motions combined produce a north-east wind on the north side of the equator. And in like manner there must be a south-east wind on the south side. The air which is thus continually moving from the poles to the equator, being rarified when it comes there, ascends to the top of the atmosphere, and then returns back to the poles.

bably be the regular course of the trade winds, supposing the parts between and near the tropics were open sea. But high lands change or interrupt their regular course. For instance, in the Indian Ocean, the trade wind is curiously modified by the lands which surround it on the north, east, and west. There, the southern trade wind blows regularly, as it ought to do, from the east and south-east, from 10° S. latitude to the tropic; but in the space from 10° S. latitude to the equator, north-west winds blow during our winter (from October to April), and south-east in the other six months, while in the whole space north of the equator, south-west winds blow during summer and north-east during winter. These winds are called monsoons. It was observed above that the regular trade wind blows in the Indian Ocean from 10° S. latitude to the tropic; but there is an exception to this in all that part of the Indian Ocean which lies between Madagascar and Cape Comorin; for there, between the months of April and October, the wind blows from the south-west, and in the contrary direction from October to April. But of both the constant and periodical winds, it may be observed that they blow only at sea; at land the wind is always variable.

75. *Variable winds.*—In the temperate zones, the direction of the winds is by no means so regular as between the tropics. In the north temperate zone, however, they blow most frequently from the south-west; in the south temperate zone from the north-west; but changing frequently to all points of the compass, and, in the north temperate zone, blowing, particularly during the spring, from the north-east.

76. The *land and sea breezes* are periodical winds that blow from the land, from night till about mid-day; and from the sea from about noon to midnight, owing to the increased heat of the land.

77. Though the general tendency of the winds is from a colder to a hotter region, yet beyond the latitude of 30° they are more or less variable: as we perceive in Britain

78. Winds, passing for a considerable time over highly heated land, become sometimes so scorching and suffocating, as to be attended with dreadful effects. These winds, under the name of the *Simoom*, are often felt in the Desert of Arabia and the interior of Africa.

79. There are four principal winds, the *north*, *west*, *south*, and *east*, which receive their names from the four points of the horizon, and which are called also the *cardinal points*.

80. The *north wind* in our hemisphere blows *from* the northern frigid zone, and is always the coldest.

81. The *south wind*, to Europeans, &c., is the warmest, particularly during the summer months, because it comes from the torrid zone, where the sun is vertical.

82. The *east wind* is the driest, because, in coming to us, it crosses the continent of Asia, which is but little watered by seas or rivers.

83. The *west wind* is usually accompanied with rain, because in its passage over the great Atlantic Ocean it takes up great quantities of vapours, which the mountains and hills precipitate as rain.

84. Wind travels at the rate of fifty or sixty miles an hour, in a great storm; in a common brisk wind, the rate is about fifteen miles an hour; and gentle zephyrs move not even one or two miles.

HURRICANES,

85. The terms *Hurricane*, *Whirlwind*, *Waterspout*, *Landspout*, *Sand-pillar*, *Tornado*, *White squall*, *Pampero*, &c., have been applied to rotatory movements of the atmosphere in different parts of the world.

86. *Hurricanes*, or *Cyclones*, are revolving storms which occur in the West Indies and in the Indian Ocean. Of a similar kind are the *Typhoons* in the Chinese Seas. These atmospheric currents are in the nature of vortices or circulating movements participated in by masses of air from 50 to 500 miles in diameter, revolving the more

rapidly the nearer the centre, up to a certain distance, or radius, *within which there is a calm.*

MOISTURE OF THE ATMOSPHERE.

87. Evaporation from the earth's surface is continually going on. It is caused chiefly by the solar action on the surface of the sea, of rivers, of lakes, and moist ground; the invisible vapour, rising into the air, mixes with it, until it is condensed and assumes the form of *mist, fog, or clouds*, or falls in the shape of *rain, snow, or hail*.

88. *Dew-point*.—If a mass of air be gradually cooled, it will at last descend to a degree of temperature at which it becomes saturated by the aqueous vapour contained in it. The degree of temperature indicated by the thermometer when dew begins to be deposited, is called the *dew-point*, and this point varies with the degree of humidity of the atmosphere.

DEW AND WHITE FROST.

89. When aqueous vapour descends during the night, in the form of drops spread on the surface of plants and other bodies, it obtains the name of *dew*; but if the temperature is very low it appears in the state of *white-frost*.

FOGS.

90. Fogs are masses of aqueous vapour, more or less dense, which rest immediately on the surface of the earth, or cling to the sides of mountains. When they remain suspended at a certain height in the atmosphere, they are called clouds.

91. When fog becomes visible any where, it is because the air is saturated with moisture. In countries where the soil is moist and hot and the air moist and cold, thick and frequent fogs may be expected. This is the case in England, the coasts of which are washed by a sea at an

seas which lie around Newfoundland, where the gulf stream, which flows from the south, has a higher temperature than the air. In London, fogs have sometimes an extraordinary density and dark colour; this probably is owing to the great admixture of smoke with the aqueous vapour. Fogs cannot possibly form when the air is very dry; for this reason, they are never observed in deserts. In the interior of large continents, and particularly in the interior of Asia and Africa, they only form in the neighbourhood of rivers and lakes.

CLOUDS.

92. Clouds are masses of condensed vapour suspended in the atmosphere; they are of the greatest importance to the earth, and they are the grand reservoir of the rains which descend and refresh the ground, and of the snows which clothe and keep it warm in winter. They also serve as a screen to protect the earth from the intense rays of the sun, and as a vehicle for the electric fluid.

93. The height of clouds varies with the seasons, being much greater in summer than in winter. In certain countries they regularly form and disperse at particular seasons, and are often the precursors of wind, rain, or storms.

RAIN.

94. Rain is water, which, originally taken up into the atmosphere in the state of vapour, is returned to the earth in the form of liquid drops. It is very unequally distributed over the regions of the globe; generally speaking, it is most abundant in the neighbourhood of the equator where evaporation is going on most rapidly, and it gradually decreases in quantity, as we recede from the equator towards the poles.

95. "Between the tropics the rains follow the sun: when he is north of the equator, the rains prevail in the northern tropic; and when he is south of that line, in the southern; hence, one half of the year is extremely wet and the other

half extremely dry; the change taking place near the equinoxes. Nevertheless, in countries situate between the fifth and tenth parallels of latitude, north and south, there are two rainy seasons and two dry; one occurs when the sun passes the zenith in his progress to the nearest tropic, and the other at his return, but in the latter the rains are less violent and of shorter duration. Although the quantity of water which falls between the tropics in a month is greater than that of a whole year in Europe, yet the number of rainy days increases with the latitude, so that there are fewest where the quantity is greatest. Neither does it fall continually during the rainy season between the tropics, for the sky is generally clear at sunrise, it becomes cloudy at ten in the morning, at noon the rain begins to fall, and, after pouring for four or five hours, the clouds vanish at sunset, and not a drop falls in the night, so that a day of uninterrupted rain is very rare." — "At sea, within the region of the trade-winds, it seldom rains, but in the narrow zone between them, known as the variables, in both the great oceans, it rains almost continually, attended by violent thunder-storms.

96. "Throughout the whole region where the monsoons prevail, it is not the sun directly, but the winds, that regulate the periodical rains." — "In these countries, the western coasts are watered during the south-west monsoon, which prevails from April to October; and the eastern coasts are watered during the north-east monsoon, which blows from October to April." — *Mrs. Somerville*.

97. A larger amount of rain falls in countries in the vicinity of the sea, than in those situated inland, and more rain is known to fall in mountainous than in level districts: the cause of this is, that the vapour coming in contact with the cold surface of the summits of the mountains is condensed, and falls in the form of rain.

98. During the wet season within the tropics, the rains are not continual, but pour down in floods for several days together, or for several hours in a day.

the wet season is from June to October, and the dry season from September to June. About the latter end of June the rains increase to torrents, and are accompanied with fatal storms of thunder and lightning.

100. On the *Gold Coast*, the rainy seasons continue from April to October; and from the end of March to the middle of September in the kingdom of Congo. The greatest quantity of rain falls about noon.

101. On the eastern coast, the seasons are the reverse of those on the western coast. Thus, in Sofala, Mozambique, and Zanguebar, the rainy season, or winter, is from September to February.

102. It seldom rains in Egypt,—in Upper Egypt, sometimes not for three or four years together, but in Lower Egypt a few slight showers fall annually.

103. Though the climate of *Abyssinia* is hot, it is tempered by the mountainous nature of the country, which from April to September causes heavy rains to fall. These, with others in countries still further south, occasion the overflowing of the Nile.

104. In Bengal, the hot or dry season begins with March, and lasts till the end of May; and violent thunder and storms occasionally interrupt the intense heat. The rainy season continues from June to September: the last three months of the year are generally pleasant; but in January and February excessive fogs prevail.

Towards the end of July, all the lower parts of Bengal are overflowed by the Ganges, forming an inundation of more than 100 miles in extent, nothing appearing but villages and trees, save here and there an elevated spot resembling an island.

105. On the coasts of Malabar and Coromandel opposite seasons are produced by the chains of the mountains, which run from north to south along the western side of the peninsula of India, and precipitate the great masses of clouds which they intercept. On the coast of Coromandel, the rainy season begins with the north-east monsoon, or from October to April; and on the Malabar coast with the south-west monsoon, or from May to Sep-

106. In the month of September the navigation on the Malabar coast is open, and ships begin to sail from thence till May to all parts of the world: on the Coromandel shore the navigation is uninterrupted from April to October.

107. The Andes divide Peru and Chili into two different climates; for while it is summer in the mountainous parts, it is winter in the valleys.

108. Winter begins on the mountains in December; in the valleys this is the first summer month; and it is said that a journey of four hours brings the traveller from one season to another.

109. The confined coasts on the west of the Andes are in general dry, whilst the extensive countries on the east of that chain are deluged with torrents of rain, from the trade winds blowing over the Atlantic from the east.

110. Travellers, on the Andes, have frequently enjoyed a delightful serenity on these elevated regions, at the same time that they have heard the frightful noise of tempests discharging themselves on the low country; they have seen lightnings issue from the clouds, and have heard the thunder roll far beneath their feet.

111. Rain is seldom or never seen at Lima; but the valleys are watered with a strong dew.

112. In Brazil, the wet season usually begins in March or April, and ends in August, when spring, or rather summer, commences.

113. The nights are very cold throughout the whole year; and those of summer more so than those in winter.

114. In Jamaica, the rainy season commences in May, and July is always very wet. In the beginning of August, the weather is uncommonly close. Hurricanes are frequent in September and October.

115. In Guatemala, it rains from the beginning of May to the beginning of November; the other six months of the year are hot and dry.

116. The mean annual quantity of rain which has been

world is stated in the following Table, from which it will be seen that the quantity becomes in general less with the increase of the latitude, though with some exceptions, which are owing to local circumstances.

Places.	Latitude North.	Inches of Rain.
Grenada - - - - -	12 0	126
Kingston (Jamaica) - - - - -	18 0	83
Calcutta - - - - -	22 39	81
Rome - - - - -	41 53	39
Paris - - - - -	48 49	21
Plymouth - - - - -	50 23	37
London - - - - -	51 30	24
Liverpool - - - - -	53 25	34
Kendal - - - - -	54 20	56
Glasgow - - - - -	55 51	21
Edinburgh - - - - -	55 57	24
Upsal - - - - -	59 52	16
Petersburg - - - - -	60 0	16

117. The quantity of rain is indicated by intensity of shading upon the small Rain Map.

Relative Quantity of Rain in Europe.

Places.	Mean number of Rainy days per annum.	Quantity of Rain in inches
England, West Coast - - - - -	152	37.5
England, East Coast - - - - -	152	25.5
Coast of France and Holland - - - - -	152	26.75
Interior of ditto - - - - -	147	25.5
Central Germany - - - - -	141	21.25
Buda - - - - -	112	18
Petersburg - - - - -	90	17

And if we express the annual quantity of rain by 100, we shall find the following number for that which falls

Proportional Quantities of Rain in Europe in the different Seasons.

Seasons.	West of England	Interior of England.	West of France.	East of France.	Germany.	Petersburg.
Winter	26·4	23·0	23·4	19·5	18·2	13·6
Spring	19·7	20·5	18·3	23·4	21·6	19·4
Summer	23·0	26·0	25·1	29·4	37·1	36·5
Autumn	30·9	30·4	33·3	27·3	23·2	30·5

OF THE AURORA BOREALIS.

118. In describing the two seasons of the year in the frigid zone (north), we had occasion to mention the benefit derived from the *Aurora Borealis*.

119. That shining light which is often seen by night in the heavens, and which is sometimes called the northern lights, or streamers, is the *Aurora Borealis*, which, till the month of March, 1716, was not much observed in England.

120. The appearance of the Aurora Borealis so exactly resembles the effects of artificial electricity, that there is every reason to believe that their causes are identical. When electricity passes through rarefied air, it exhibits a diffused luminous stream, which has all the characteristic appearances of the Aurora, and hence it is highly probable that this natural phenomenon is occasioned by the passage of electricity through the upper regions of the atmosphere. The influence of the Aurora upon the magnetic needle is now an ascertained fact: the needle is disturbed immediately before and during the appearance of the Aurora. The connection between the Aurora and magnetism is further evident from the fact, that the beams or coruscations issuing from a point in the horizon, west or north, are frequently observed to run in the magnetic meridian. At the same time a luminous arch is occasionally seen stretching across the heavens, and crossing the magnetic meridian at right angles. This species of light usually appears in streams, ascending toward the zenith

from a dusky line, a few degrees above the horizon. Sometimes it assumes a wavy appearance, as in America, in March, 1782, when it overspread the whole hemisphere; sometimes it appears in detached places; at other times it almost covers the hemisphere. As the streams of light have a tremulous motion, they are called, in the Shetland Isles, merry dancers. They assume all shapes, and a variety of colours, from a pale red or yellow, to a deep red or blood colour, and, in the northern latitudes, serve to illuminate the earth and cheer the gloom of long winter nights. This light is sometimes near the earth. It is also said to have been seen between the spectator and a distant mountain. The Aurora Borealis is said to be frequently accompanied by sound, which is variously described as a hissing, a murmuring, a rumbling, and a crackling sound. This has been so positively asserted by different observers, that no doubt can be entertained of the fact.

SOLAR DISTRIBUTION OF TEMPERATURE ON THE EARTH'S SURFACE.

121. The temperature of the countries which we have studied is not the same in all: some are extremely hot, others are intensely cold.

122. The hottest countries are, in general, those within the tropics; and the coldest are the polar regions.

123. According to its temperature the earth is divided into five zones, of which two are called the *frigid zones*, two the *temperate zones*, and one the *torrid zone*.

124. The *frigid zones* are those portions of the globe included within the polar circles; one is the *north*, and the other the *south*, frigid zone. Each zone is 1624 miles broad; and, for the most part, too cold to be inhabited by man.

125. The two *temperate zones* are the spaces of land and water all round the globe, comprehended between the polar circles and the tropics; each being 2970 miles

tropic of Cancer and the arctic circle; and the *south* temperate zone between the tropic of Capricorn and the antarctic circle.

126. The *torrid zone* is all that portion of the earth and water round the globe which is included within the tropics, being 3244 miles broad.

127. Heat and cold do not, however, depend solely on a particular situation in the temperate and torrid zones: the higher a country lies above the level of the sea, the colder it is; and, at a certain height, in every zone, it is so cold, that snow and ice do not melt.

128. The summits of the highest mountains within the torrid zone are covered with perpetual snows. The Andes of South America have climates of all temperatures, from the *torrid* to the *frigid*; and the line above which the snow does not melt is called the *snow line*.

CLIMATE.

129. The term climate signifies the prevailing character of the weather at any place, and the causes which determined this are:—1. The latitude of a country; that is, its geographical position with reference to the equator. 2. Elevation of the land above the sea-level. 3. The proximity to, or remoteness of a country from, the sea. 4. The slope of a country, or the aspect it presents to the sun's course. 5. The position and direction of mountain chains. 6. The nature of the soil. 7. The degree of cultivation and improvement at which the country has arrived. 8. The prevalent winds. 9. The annual quantity of rain that falls in a country.

130. We shall now consider these influences separately.

(1.) *The latitude of a country*, and the consequent direction in which the solar rays fall upon its surface, are the principal causes of the temperature to which it is subject. Within the tropics, the greatest heat is experienced because the sun is always vertical to some portion of the globe within these limits, and the solar action is more intense when the rays are perpendicular to the surface: but

and because fewer of them are spread over a larger space, they are less powerful, and consequently less influential in promoting temperature.

(2.) *Elevation of the land above the sea-level.*—We may travel several miles from the equator towards the poles, along the level surface of the earth, before we become sensible of a diminished temperature; but immediately we begin to increase our elevation, a rapid change of temperature is experienced, until we arrive at a point where constant frost prevails. This cold, which reigns in the higher region of the atmosphere, is due to the rarefaction of the air, and to the circumstance of that region being further removed from the heat which is reflected from the earth's surface. As we ascend, the heat gradually diminishes, an ascent of only 1,000 yards causing the thermometer to fall 10° ; this sinking, though not uniform with equal ascents, will go on until we reach the line of perpetual congelation. This beautiful provision, of course, increases considerably the number of habitable countries within the Torrid Zone.

(3.) *The proximity to, or remoteness of a country from, the sea.*—The sea being of a more uniform temperature than the land, the winds that sweep over it partake somewhat of the same character, and impress it upon the physical climate of the countries over which they range. A wind blowing from the ocean is loaded with vapours, but one passing over an extent of land is dry and parched. In our own islands, the south-west and east wind are quite opposite in character: hence it is, that islands and maritime districts enjoy a milder climate than inland regions in the same latitude; the cooler winds from the sea temper the summer heat, and the warmer winds moderate the cold of winter.

(4.) *The slope of a country, or the aspect it presents to the sun's course,* has an important influence upon its climate. The angle at which the sun's rays strike the ground, and consequently the power of those rays in heating it, varies with the exposure of the soil relatively

dian 45 degrees above the horizon, his rays fall perpendicularly on the side of a hill facing the south at an equal angle, while the plain below receives them at an angle of 45 degrees. Supposing the north side of the hill to have a similar slope, the rays would run parallel to its surface, and their effect be very trifling; but if the declivity were still greater, the whole surface would be in the shade. This, though an extreme case, serves to show why temperature varies with the inclination of the earth's surface. Since the warmest part of the day is not when the sun is on the meridian, but, owing to the accumulation of the heat, two or three hours afterwards, it follows that, in our hemisphere, a south-south-west or south-western aspect is the warmest; and a north-north-east, or north-eastern, the coldest, if no local circumstances exist to make it otherwise.

(5.) *The position and direction of mountain chains.* — Mountains affect climate in more ways than one. They attract the vapours in the atmosphere, and, causing them to condense, give rise to those violent rains which are often experienced in the neighbourhood of lofty ranges.

(6.) *The nature of the soil* is another cause which must very materially operate upon climate. One soil acquires heat, keeps its acquired heat much longer, or radiates it more readily than another. A soil which, from its porous character, allows the rain descending upon it to pass freely into the earth, will emit much fewer exhalations than one which retains the waters near the surface. All the varieties of soil, — light and open, vegetable moulds, gravelly and rocky tracts, stiff wet clays, and sandy plains, — have, it cannot be questioned, their different powers of radiation and absorption; and whether a district be clay or sand, bare or covered with vegetation, for a like cause, greatly effects its temperature.

(7.) *The degree of cultivation and improvement at which the country has arrived.* — Without cultivation, few climates would be healthy or agreeable. In countries to which the labours of civilised man have never been ex-

grounds, form pestilential marshes; and forests, thickets, and weeds, are so numerous and impenetrable, as to prevent the earth from receiving the beneficial influence of the sun's rays. The air, from these causes, is constantly filled with noxious exhalations. But the efforts of the human race, conducted with skill and perseverance, produce a surprising change: marshes are drained; rivers embanked; the soil, broken up by the plough, is exposed to the sun and wind, and the clearing away of the forests raises the temperature, and allows a freer circulation to the atmosphere.

(8.) *The prevalent winds.* — The combined influence of the several causes of physical climate which we have been considering will be variously modified by the prevalent winds of a country. This is obvious enough, from what has been said in the Chapter on Winds, from which we learn that the character of a wind depends upon the region whence it comes, and the surface over which it passes. Great Britain, for example, would in a great measure lose its insular climate, if its prevailing winds came across the Continent, instead of from the Atlantic Ocean.

(9.) *The annual quantity of rain that falls in a country* constitutes an important feature of its climate. In general, more rain falls in islands and on sea-coasts than in inland districts, among mountains than in level regions, and within the tropics than in the other zones: the great heat which prevails in the equatorial regions causes the amount of evaporation to be much greater than in higher latitudes, and hence the atmosphere becomes charged with a greater quantity of moisture.

ISOTHERMAL LINES.

131. Isothermals are lines drawn upon a map, connecting all places on the surface of the globe having the same mean annual temperature. If a traveller were to set out, say eastward, and visit in succession all those places which have the same mean temperature, he would trace out on the earth's surface, a line, called an isothermal line.

As may be seen on the Physical Map, these *isotherms* form concave and convex lines, which diverge more and more from the parallels of latitude as they recede from the equator. Now the causes which influence the forms of these lines have been explained in the preceding chapter; but the principal of these is, elevation above the sea-level.

132. The lines connecting the points of mean summer temperature are called *Isotherals*. The lines joining the points of mean winter temperature are termed *Isochimenals*.

133. The western and middle parts of Africa are the hottest on the earth; because the Trade Winds, in passing over the sandy deserts of this immense continent, become heated to an extreme degree before they arrive at the western coast.

On the American continent the climate is much colder than on the eastern in similar parallels of latitude; and the eastern parts of both continents are colder than the western.

134. Canada, in North America, which is nearly under the same parallels as France, has its winters almost as severe as those of Petersburg.

The river St. Lawrence, notwithstanding its great breadth, is sometimes frozen, the whole of the winter, sufficiently strong to bear carriages on its glassy bosom. Canada is also regularly covered with snow from October till April, but so hard as to bear travelling on it. The air too is very dry.

135. Philadelphia and New York, which are nearly in the same parallel with Madrid, have frequently very severe winters; but these are compensated by the excessive heat of the summer.

136. In the southern hemisphere the cold, in the same latitude, is much greater than in the northern.

The climate of Tierra del Fuego is an instance of this fact. It is as far south as Newcastle is north; yet Captain Cook, who was there at midsummer, found the cold so excessive, that a party of his men who were botanising on the hills, narrowly escaped perishing.

Captain Parry approached within nine degrees of the North Pole but Weddell could get no nearer the South Pole than within sixteen degrees.

137. The weather is commonly more settled on great continents than in islands. The heat of summer is greater in the former; and the cold of winter is less intense in the latter.

In islands the heat is tempered by clouds and vapours from the surrounding sea; and, from the same cause, the weather is inconstant. Hence, also, the cold of winter is mitigated; and, generally, the frost is of short duration. This is particularly the case with the British Isles.

GEOGRAPHICAL DISTRIBUTION OF PLANTS.

138. The vegetable kingdom has been divided into three great classes; namely, Cryptogamic, Endogenous, and Exogenous plants, and these have been again divided into numerous natural families.

(1.) *Cryptogamous* or flowerless plants, embracing mosses, lichens, fungi, ferns, sea-weeds, &c.

(2.) *Endogenous plants*, which have their stems increasing from within, as the numerous grasses, comprehending rushes, sedges, and the most important of all vegetable tribes, viz., the valuable pasture and all the corn-yielding plants, wheat, barley, oats, maize, rice, the sugar-cane, &c., with lilies and the palm family. These are also called *monocotyledons*, from having only one seedlobe.

(3.) *Exogenous plants*, which have their stems growing by additions from without; these are the most perfect, beautiful, and numerous class, embracing the forest trees, as the oak, elm, pine, chestnut, poplar, hazel, willow, birch, &c., with the laburnum, and some of the stateliest members of the tropical forest, as the mimosa, tamarind, and the trees yielding logwood, Brazil-wood, &c., most of the flowering shrubs and herbs, as the rhododendron, azalea, arbutus, thyme, sage, lavender, mint, rosemary, with the plants yielding castor, croton, and other oils; also the dahlia, artichoke, thistle, lettuce, marigold, dandelion, daisy, &c. These are also called *dicotyledons*, from the seed consisting of two lobes.

139. The last two classes belong to the *phænogamous*, or flower-bearing plants.

VEGETATION ZONES.

140. *The Equatorial Zone of Palms and Bananas* extends on both sides of the equator of temperature to about 15° . Its temperature ranges from the maximum heat to 70° . This may also be distinguished as the region of the spices and aromatic plants; it includes the Molucca group of islands, and the northern part of South America. The region of medicinal barks is that of the elevated regions of South America, from twelve hundred to five thousand feet above the level of the sea.

141. *The Tropical Zone of Tree-Ferns and Figs*, from lat. 15° to the tropics, having a mean annual temperature of 76° . In the Old Continent the date-palm flourishes; in Western Africa is the peculiar genus *adansonia*, the baobab, or monkey bread, the largest known tree in the world. In both the Indian peninsulas monster fig-trees, aromatic lilies, and woods of aromatic barks, as the cinnamon and cassia, abound.

142. *The Sub-Tropical Zone of Myrtles and Laurels*, from the tropics to lat. 34° , having a mean annual temperature of 76° . This region is distinguished in the New World by various species of conifers, oaks, and walnuts; the magnolias, chiefly large trees, with large leaves and highly odorous flowers, in the southern part of North America. On the Old Continent, the slender date-palm soars aloft; and the tender-leaved acacias flourish. The palm family is numerous, within the above limits, throughout the continent of Asia.

143. *The Warm Temperate Zone of Evergreen Trees*, from lat. 34° to 45° , mean annual temperature 58° . In this region of evergreen woods the dwarf-palm is here and there met with, the hyacinth, and narcissus; northward, the myrtle, tinus, arbutus, and pistachio, interlaced, on the Alpine barrier, with the vine and the flame-coloured bignonias. In the New World this region is marked by a great variety of oaks and firs.

144. *The Cold Temperate Zone of European Trees*,

region, which comprises the lake district in the New World, and is bounded in the Old Continent by the Pyrenees, Alps, and Caucasus, consists of vast forests of different species of pine. In Central and Western Europe, there are extensive woods of chestnut, oak, and beech trees. In the more eastern portion, the lime and elm contribute abundantly to the composition of forests. The basin of the Mediterranean is distinguished by the abundance of aromatic labiate plants, lily plants, and the resinous rock-roses. Here we find, in the hop and the climatis, representations of the tropical climbers, and the solitary dwarf-palm and balsam trees denote the transition from the tropics.

145. *The Sub-Arctic Zone of Conifers*, from lat. 58° to the Polar circle, mean annual temperature 40° . This region consists of widely extended masses of forest, including firs and pines, ~~Siberian stone-pines~~, birch, aspen, and larch. By brooks and on damp soil the willow and alder occur; on dry hills grow the rein-deer lichen and Iceland moss. A rich carpet of variegated flowers serves for the decoration of this zone.

146. *The Arctic Zone of Rhododendrons*, from the Polar circle to lat. 72° , mean annual temperature 30° . This region is characterised by the abundance of mosses and lichens, and by the presence of the saxifrages, poppies, crow-foots and gentians; the chick-weed tribe, sedges, willow, and fir.

147. *The Polar Zone of Alpine Plants and Red-Snow Algæ*, beyond lat. 72° , the region of everlasting ice and snow, in which all animal life goes out.

GEOGRAPHICAL DISTRIBUTION OF ANIMALS.

148. In the present chapter we shall consider the distribution of the animal kingdom according to the following classes, beginning with the lowest, and ascending to the highest order of animal life; viz. zoophytes, insects, marine and shell-fish, fishes, reptiles, birds and quadru-

149. *Zoophytes* are the lowest class of animals, and may be regarded as confused masses of beings, none of them endued with a separate life. Coral is externally an animal and internally a rock; madrepores and millepores, on the contrary, have a stony covering, and seem to exist only in regions warmed by a vertical sun. Those vast reefs throughout the Pacific and Indian oceans have been raised by these creatures. In the Mediterranean there are large seas of coral; Sicily, in particular, has long been famed for its fisheries of the true red coral: the gulfs of Arabia and of Persia are peopled with subterranean forests of zoophytes. The mollusca, whether naked or covered, possess each an individual existence. The pearl oyster arrives at perfection only in tropical seas.

150. *Insects* are the next in the scale of animal existence; they are distributed through all latitudes, but increase in kinds and in numbers from the poles towards the equator. The stations of insect tribes are *the sea, the sea-shores, brackish waters, fresh water, various kinds of soil, mountains, living vegetables, decomposed vegetables, living animals, dead animals.*

151. It is amidst the exuberant vegetation of the Torrid Zone that insect life attains its full development. In the tropical regions of Central and South America innumerable quantities of shining flies present, at night, the appearance of an extensive conflagration. The butterflies of America, of Africa, and of the East Indies, are adorned with the most brilliant colours.

152. *Marine Shell-fish and Fishes.* The conchology of the Indian seas is the most splendid, profuse, and varied, of any division of the globe; America and the West Indies are very deficient in species, compared with those of Asia in similar latitudes. The shells of the Austral Ocean rank next in splendour to those of the Indian seas. Many species of the shell-fish of the Mediterranean are similar to those of the Red Sea, the northern coast of Africa, and of the Indian Ocean. The

153. *Fishes.* It is probable that every basin of the ocean has its peculiar tribes, and the regions which some inhabit are well known; thus the cod, which are distributed all over the North Atlantic, congregate chiefly upon the great banks to the south and south-east of Newfoundland. In the Torrid Zone and its vicinity the most remarkable species of fish are met with. *Sharks*, which are noted for their extreme ferocity, roam in the deep open ocean in tropical and warm climates: the porcupine fish is an inhabitant of warm seas; the saw-fish inhabits the Atlantic Ocean, extending its range across the whole expanse of waters. The sword-fish is found in the Mediterranean, and perhaps extends its range to the coasts of America. The family of the flying-fish is met with in all tropical seas, in the Atlantic as well as the Pacific Ocean. The most enormous of all fishes in size are the whale tribe, which belong more particularly to the high latitudes.

154. The most remarkable of all fishes are the *gymnoti* (electric eels), which inhabit several of the rivers and pools in the llanos of South America; all the inhabitants of the waters dread the society of these animals. The migrations of fishes seems to be occasioned by their seeking for shallow water in order to deposit their spawn. The *torpedo*, or cramp-fish, is dispersed over all the seas: but the shocks which it communicates cannot be compared in violence to those of the *gymnotus*.

155. *Reptiles*,—which are divided into two classes, reptilia and amphibia, —arrive at their full development in the equatorial regions, particularly in tropical America, owing to the combined influence of intense heat, extensive forests, marshes and rivers; the former includes tortoises and turtles, lizards, crocodiles, and serpents; the latter includes frogs, toads, and salamanders. The larger boas belong to the New World, as also the rattle-snakes, of which there are four species; the pythons are confined to Africa and Asia. The crocodile proper inhabits the Nile; the alligator or cayman, America; and the gavial

amphibia are more capable of enduring the extremes of temperature than the true reptilia, and accordingly their range is greater; and although they are larger and more numerous in the warm regions of the earth, they also exist in high and cold latitudes.

156. *Birds.* The Torrid Zone possesses a variety of the most beautiful birds, including the humming-bird of America, the cockatoos, the bird of Paradise, the lories, and several others of the parrot genus. The bird of Paradise is confined to New Guinea and the neighbouring islands. Of birds which cannot fly, the ostrich inhabits Africa and Arabia; the cassowary, Java and New Holland; and in South America is the ostrich of Brazil. The albatross is seen skimming the surface of the ocean, as we approach the 40th parallel; the sea swallows and other tropical birds keep within the Torrid Zone. The condor, which frequently soars to an elevation of four miles, never forsakes the chain of the Cordilleras of Peru and Mexico; and the great eagle does not quit the ridges of the Alps. The frozen zones have their own kinds of birds, among which are owls (in Lapland), ducks, and other aquatic birds. The jer-falcons of Norway and Iceland, perfect models of symmetry and strength, and the most characteristic and vigorous of all the birds of prey, are quite unknown, not only within the tropics, but even in the temperate latitudes, excepting upon the summits of very lofty mountains, where the climate is cold: and even there they want the dash and vigour of the hawks of the north.

157. *Mammalia*, or mammiferous quadrupeds: these stand at the head of the animal creation, and are distributed into eight great groups; though they differ vastly in appearance and habits, they nevertheless correspond in one particular, that of suckling their young. The groups, with some of their types, are as follow:

158. 1. *Quadrumana* (four-handed), — monkeys, apes (*simiæ*). 2. *Carnivora* (flesh-eaters), — cat (in this tribe the sanguinary desire is most strongly developed in the

mole. 3. *Marsupialia* (pouched), — opossum, kangaroo, wombat. 4. *Rodentia* (gnawers), — beaver, porcupine, squirrel, jerboa. 5. *Edentata* (toothless), — sloth, armadillo, ornithorynchus. 6. *Pachydermata* (thick-skinned), — elephant, rhinoceros, hippopotamus, zebra, tapir, horse, ass, boar, and badger. 7. *Ruminantia* (chewing the cud), — camel, ox, goat, sheep, deer, antelope, giraffe. 8. *Cetacea* (belonging to whales), — whale, dolphin, narwhal, seal, porpoise.

159. The ranges of some of these animals are very extensive.

GEOGRAPHICAL DISTRIBUTION OF MAN.

160. Man, the Lord of Creation, has the whole earth for his abode. The physical capabilities of his frame fit him for every variety of climate, soil, and situation; and, being capable of deriving nourishment from all kinds of food, his habitations extend to the remotest confines of animated nature. Under the scorching rays of a tropical sun, upon the banks of the Senegal, the human body supports a heat which causes spirits of wine to boil; and in the polar regions of north-east Asia it resists a cold which freezes mercury.

161. On this fact Dr. Paley remarks: "The human animal is the only one which is naked and the only one which can clothe itself. This is one of the properties which renders him an animal of all climates, and of all seasons. He can adapt the warmth or lightness of his covering to the temperature of his habitation. Had he been born with a fleece upon his back, although he might have been comforted by its warmth in high latitudes, it would have oppressed him by its weight and heat as the species spread towards the equator."

162. The different races into which the human family have been divided, will be found described at pages 12 and 13; their characteristic features are indicated upon the small physical map. But mankind may all be divided

into three classes with regard to their modes of life, according to the nature and climate of the country which they inhabit. 1. *Roving tribes and fishers*; 2. *Wandering pastoral tribes*; or, 3. *Fixed nations*.

163. The *first class* embraces all those tribes and small nations who subsist by hunting and fishing, but rove about without any fixed habitation.

164. Under the *second class* are included those nations or tribes who have no settled residence, but live in moveable tents, and, with their flocks and herds, wander from place to place, in the extensive plains which are common to Asia and some parts of Africa. Such are the Laplanders in Europe; the Arabs, the Calmucks, the Monguls, and the Tartar tribes of Asia, whose food consists of the flesh and milk of tame animals, as of camels, horses, horned cattle, sheep, and reindeer.

165. The *third class* comprehends all those nations that have permanent habitations, and dwell in cities, towns, and villages. Such are the nations of Europe; the Persians, the Chinese, the Japanese, the Hindoos in Asia; all European colonies; the European settlers in Mexico, Peru, Chili, Brazil, the United States of America, &c., whose land is divided among different owners, and rendered productive by agriculture.

166. Their ideas of *property* further distinguish these three grand classes of mankind.

167. The property of the first consists entirely in their utensils and weapons, and the food they have just acquired. Herds and tents constitute the property of the second class; for the right of pasturage is common to all. The third alone have property in land.

168. *Modes of life* furnish another important distinction.

169. People who live only by hunting and fishing are ignorant, unsociable and mostly cruel; the pastoral tribes are less ferocious savages, or barbarians, though they have little civilisation; and nations engaged in agriculture and commerce are always enlightened and civilised.

170. *Education and learning*, or the knowledge of

the arts and sciences, essentially contribute towards civilisation.

171. To promote it, various institutions are established among fixed nations; as schools for youth, universities, or colleges, and academies of arts and sciences.

172. In an *university* the whole extent of human learning is usually taught; but most generally philosophy, divinity, physic, law, and the learned languages.

173. Such are the universities of Oxford and Cambridge, London, Edinburgh, Glasgow, Aberdeen, St. Andrew's, and Dublin, in the British Empire; Upsal, in Sweden; Berlin, Munich, Göttingen, &c., in Germany; Leyden, in Holland; Pennsylvania, in America; Benares, in Hindostan; and several others in Europe, Asia, and America.

174. **Academies, or societies, of learned men,** are incorporated with or without the patronage of the state for the purpose of promoting the arts and sciences.

175. Such are the Royal Society in London; the Institute of France; the Royal Academy of Sciences at Berlin; the Imperial Academy of Sciences and the Fine Arts, at Petersburg; the Royal Academy of the Fine Arts in London; the Royal Society of Edinburgh, &c.

DIFFERENCE OF LANGUAGE AND NATION.

176. Mankind differ also in *languages, religion, civilisation, and form of government.*

177. The learned geographer Balbi enumerates *eight hundred and sixty* distinct languages, besides five thousand dialects.

178. Of these languages *fifty-three* belong to Europe, *one hundred and fourteen* to Africa, *one hundred and fifty-three* to Asia, *four hundred and twenty-three* to America, and *one hundred and seventeen* to Oceanica, or the numerous islands stretching between Hindostan and South America.

179. A likeness or difference of language implies an

Illus. 1 People who speak the same language, or a dialect of the same language, belong to the same nation; where there is no resemblance of language, they are different nations, though living under the same government.

2. Thus the Germans, Dutch, Danes, and Swedes, are *one nation*, speaking all dialects of the same language, though citizens of different states widely distant. But the English, the Welsh, and the Highlanders of Scotland, are distinct nations, belonging to the same state.

180. The French, Italian, English, and German, are the most polite and cultivated languages of Europe; and in Asia, the Arabic, Persian, and Sanscrit.

181. The most widely diffused languages in the world are, 1. The *German* or *Teutonic*, with its dialects, of which the English is one; 2. the *Slavonic*, of which the Russian is a dialect; 3. The *Arabic*, which is also the religious language of all Mahomedan countries; and, 4. The *Chinese*, which perhaps is the most extensive of any.

DIFFERENCE OF RELIGION.

182. As all savage nations practise some religious or superstitious ceremonies, it would appear that there is no people entirely destitute of the knowledge of a Supreme Being, though with some rude tribes this knowledge is very imperfect.

183. The difference of religion divides mankind into classes: 1. Those who worship one God, and have sacred writings containing His will for the regulation of their lives; 2. Those who, instead of Him, or besides Him, worship supposed deities of different kinds.

184. The first include the Jews, Christians, and Mahomedans; the second are called Heathen or Pagans.

185. Christians are divided into, 1. The Roman Catholics; 2. The Protestants; and, 3. The Greek church. But each is subdivided into numerous sects or parties.

186. The Mahomedans are divided into, 1. The sect of Omar, to which belong the Turks and Arabians; 2. The Sect of Ali, who are the Mahomedans of Persia.

acknowledge ONE God; but worship, beside him, images of various kinds.

188. The Pagans seem also to acknowledge a Supreme Being; but they likewise worship natural objects, as the sun, fire, rivers, plants, beasts, insects, serpents, &c.

189. The Jews are scattered over Europe and Asia: their religion is therefore professed by them in all those countries in which they live.

190. The Christian religion is established in almost all Europe, and in some parts of Asia and Africa; in America, and in all the European colonies, it is widely diffused.

191. There is no endowed religion in the United States, consequently no hierarchy nor tithes, but all religions enjoy the same liberal toleration.

192. The Mahomedan religion has its chief seat in Asia, especially in Arabia, Turkey, Persia, and Tartary; but it is also established in northern and a great part of central Africa, and in European Turkey.

193. The nations of the interior of Africa, the savage tribes of America, the more gentle islanders of the Pacific and Indian Oceans, the rude tribes of the north of Asia, are Heathen, imposed on by their priests and sorcerers, called Fetishers, Angekoks, Shamans, &c.

SOCIETY AND FORMS OF GOVERNMENT.

194. Savage tribes, having little connection among themselves, have seldom any laws or government. Nations united in a body frame and adopt laws and a form of government, to which every individual submits for the general good of the community.

195. A *state* or *commonwealth* is a body of people connected by the same government, and yielding obedience to the same general laws.

196. The members of some states are free, enjoying equal rights and privileges, and are subject to the supreme law alone, as in the northern provinces of the

United States; in others, a difference of rights prevails, and some are slaves or vassals, some commons and citizens, and some few are called nobles, enjoying peculiar privileges.

197. The *origin* of all states is either traced to force or conquest, when the majority is compelled to yield to the will of a few, or of one man; or it springs from a social compact, by which a *constitution*, or fundamental laws, are fixed for the government of the state and the welfare of individuals.

198. The exercise of *supreme power* is either vested in *one* or shared by *many*.

199. The *supreme power* consists of three parts: 1. The *legislative*, which enacts laws; 2. The *judicial*, which determines the application of the law in individual cases; and 3. The *executive*, which puts the laws in execution.

200. A *monarchy* is that state in which the supreme power is vested in one person; and it may be either *arbitrary*, *limited*, *hereditary*, or *elective*.

201. When the monarch has the exercise of the supreme power without control, when his will is the law, the state is called an *arbitrary* or *despotic* monarchy; as Russia, Turkey, and many of the states of Asia.

202. That state wherein the monarch has only a part of the supreme power in common with some of his subjects (as the nobility, clergy, and commons), and is bound to observe the fundamental laws or constitution of the kingdom, is called a *limited monarchy*.

203. The subjects having a share in the government are named peers, estates, representatives, &c.; and their assembly is called a *diet*, a *parliament*, &c.

204. Sweden and Britain are limited monarchies.

205. *Hereditary* monarchy descends, by inheritance, to a relation of the same family.

206. Britain, Spain, and Prussia, are hereditary monarchies.

chosen by certain electors on the death or abdication of his predecessor.

208. Such were once Poland and the German Empire.

209. A *republic* is that state in which the supreme power is shared by many; and it may be either an *aristocracy* or a *democracy*.

210. An *aristocracy* is a republican state, wherein the supreme power is consigned to the *nobles*, or to a *few privileged men*.

211. Venice and Genoa were once of this class.

212. A *democracy* is a republican state, wherein the supreme power is placed in the hands of rulers chosen by and from the whole body of the people, or by their representatives assembled in a congress or national assembly; as the United States of America, which elect their president every four years.

213. *Political liberty* is enjoyed in various degrees, according to the modifications of the government or the constitution of states.

Obs. 1. In Britain, monarchy, aristocracy, and democracy are blended; and the powers of the king, the lords, and the commons, have been so modified as to form a reciprocal check to each other, and therefore a safeguard against oppression.

2. Aristocracy and democracy are blended in the Swiss states.

214. According to its extent, population, revenue, naval and military force, and civilisation, so do we judge of the *strength* of any state.

PRODUCTIONS OF THE EARTH WHICH FORM ARTICLES OF COMMERCE.

215. All natural productions are arranged under three grand classes, called KINGDOMS: 1. The *Mineral*; 2. The *Vegetable*; and 3. The *Animal* kingdom.

216. The *Mineral* kingdom contains, 1. all earths and stones; 2. mineral combustibles; 3. salts; and, 4. metals.

217. The *Vegetable* kingdom includes all trees, shrubs, and plants, whether in the ocean or on the land; hence the rank of marine and terrestrial vegetables.

218. The *Animal* kingdom contains all living creatures, as, 1. quadrupeds; 2. bipeds; 3. fowls; 4. fishes; 5. reptiles; 6. insects; 7. worms.

219. Man, the chief of the world, is, on earth, the noblest of all God's creatures. The faculties of reason and speech distinguish him as lord of the creation; and his progressive improvement marks his pre-eminence above all other animals.

220. The following are the principal exports of the different countries.

EUROPE.

221. *England.* — Cotton manufactures, woollen manufactures, cotton yarn, linen manufactures, hardware and cutlery, refined sugar, iron and steel (wrought and unwrought), brass and copper manufactures, silk manufactures, earthenware, glass, wearing apparel, haberdashery, &c.; leather, saddlery, &c.; butter and cheese, tin and pewter wares, &c.; fish, soap and candles; fire arms and ammunition, hats, beer and ale, machinery, plate and jewellery, coals, salt, stationery, lead and shot, tin, painters' colours.

222. *Wales.* — Coal, iron in vast quantities, copper, tin, lead, slate, woollen cloth, cattle.

223. *Scotland.* — Cotton and linen stuffs, cotton and linen yarn, wool, iron, hardware, silk goods, coals, spirits, beer, black cattle, sheep, herrings, salmon and other salted and fresh fish, stationery, &c.

224. *Ireland.* — Linen manufactures, cotton manufactures, wheat, flour, oatmeal, &c.; barley, oats and other grain; cows and oxen, swine, horses, bacon and hams, beef and pork, butter, lard, soap and candles, flax (undressed), spirits, yarn, and other articles.

225. *France.* — Silk, cotton, wine, wool, ribands, brandies, linen, cambric and lawn, dye stuffs, mercery, clothes, liqueurs, Parisian articles, perfumery, refined sugar, clock and watch-work, paper, tabletterie, porcelain, plaques,

226. *Switzerland*. — Horned cattle, cheese, ribands, thread, linens, silk, laces, watches, jewellery, &c.

227. *Belgium*. — Oak-bark, flax, madder, clover-seed, vegetable oils, lace, lawn, and fine linen.

228. *Holland*. — Butter, cheese, madder, spirits, tobacco-pipes, flax.

229. *Germany*. — Grain, salted provisions, especially hams, live cattle and hogs, timber, iron and steel, lead, salt, linen, linen yarn, and linen rags, woollens, porcelain, glass.

230. *Austrian Empire*. — Woollen wares, silk (raw, spun, and manufactured), wool, cotton wares, fine linen, corn, cattle, iron, fruits, cheese, &c.; timber and wooden wares, wine and spirits, wax and honey, cotton; linen and woollen yarn; salt, potashes, tobacco, quicksilver, dye stuffs, wrought silver, jewels, olive oil, coffee, refined sugar.

231. *Prussia*. — Corn, wool, timber, Westphalian hams, zinc, flax, bristles, salted provisions, and other articles of raw produce, linen and woollen cloths, silk wares, iron and hardware, jewellery, watches, and wooden clocks, Prussian blue, spirits, beer, amber, &c.

232. *Denmark and her Dependencies*. — Wheat, rye, barley, oats, buck-wheat, pease, tares, beans, rape-seed, flax and other seeds, clover-seed, oil-cakes for fattening cattle, butter, cheese, pork (salted and smoked), beef (salted and smoked), tallow, horses, oxen, pigs, corn, brandy, hides (horse and ox), skins, honey, wax, goose-quills, wood for fuel, herrings, fish (salted or smoked), oysters, eider down, feathers for beds, walrus skins, reindeer skins, fox, seal, train oil, whalebone.

233. *Sweden and Norway*. — Timber, iron, copper, alum, cobalt, eider down, pitch and tar.

234. *Russia*. — Tallow, grain, particularly wheat, hemp, and flax; potashes, bristles, linseed and hemp seed, oils, furs, leather; fox, hare, and squirrel skins; canvass, wool, caviar, wax, isinglass, tar, &c.

235. *Spain*. — Wine, wool, fruits of various kinds, lead, quicksilver, brandy, barilla, olive oil, raw silk, wheat, &c.

236. *Portugal*. — Wine, oil, salt, wool, fruits, cork, &c.

237. *Italy*. — Raw and thrown silk, silk manufactures, olive oil, corn, wine, cheese, raisins, almonds, and oranges, brimstone, barilla, liquorice, bark, shumac, straw hats, and straw plaiting, marble, hemp, rags, &c.

238. *Sicily*. — Shumac, fruits, wines and spirits, brimstone, oils (linseed and olive), linseed, manna, silk, barilla, liquorice paste, salt, argol, and cream of tartar, corn, grain, rice, and pulse, cotton wool, skins, lemon juice, cheese, wool, and other articles.

239. *Turkey*. — Sheep's wool, goat's hair, cattle, horses, hogs, hides, hare skins, wheat, raw cotton and silk, tobacco, raisins, figs, almonds, mastic and other gums, gall-nuts, leeches, honey, wax, saffron, madder, linseed, turpentine, safflower, Meerschaum pipes, whetstones, carpets, silk and cotton fabrics, leather, copper and metallic wares, &c.

240. *Greece*. — Cotton, corn, olive oil, wool, tobacco currants, silk, cheese, dye stuffs, honey, and fruits.

ASIA.

241. *Asiatic Turkey*. — Raw silk, goat's hair, Turkey carpets, raisins, drugs, and gums.

242. *Arabia*. — Coffee, pearls, dried dates, skins, horses, senna leaves, indigo, gums of various kinds, and myrrh.

243. *Persia*. — Silk, gall-nuts, wool, madder, yellow berries, pearls and precious stones, dried fruits, tobacco, wine, drugs, sulphur, torquoises, Kerman shawls, rose water, horses, raw silk, grain, cotton, carpets, cotton manufactures, salt, sheep, woollens, silk stuffs, and gold embroidery, arms, Hamadan leather, sugar (raw and refined), and opium, Indian goods, wheat, dates, rice, timber, raw hides, naphtha, brocades, cashmere shawls, pearls, &c.

244. *India*. — Cotton wool, cassia, cinnamon, coffee, cotton goods, elephants' teeth, ginger, gum-arabic, lac-dye, shell-lac, hemp, hides, indigo, castor oil, pepper, rice, salt-petre, and cubic nitre, flax seed and linseed, senna, raw and waste silk, bandanna handkerchiefs, sugar (unrefined), tea, tin, tobacco (unmanufactured), sheep's wool.

245. *South-Eastern Peninsula*.—Cotton, silk, tin, teak-wood, eagle-wood, sandal-wood, gum-lac, grain, salt, oil, sugar, pepper, precious stones, particularly rubies and agates, iron, and varnished works.

AFRICA.

246. *Egypt*.—Grain and coarse linen, cotton, indigo.

247. *Nubia*.—Cotton goods, arms, and a variety of trifling articles.

248. *Abyssinia*.—Ivory, gold, and slaves.

249. *Barbary*.—Olive oil, soap, almonds (sweet and bitter), cow hides, and calf skins, goat skins, ostrich feathers, fruit, gold dust, ivory, and gums.

250. *Soudan*.—Gold is found in the river-courses; but man is the staple commerce, a disgrace to the savage who sells his fellow-creature, but a far greater disgrace to the more savage purchaser, who dares to assume the sacred name of Christian.

251. *Southern Africa*.—Corn, wine, bacon.

252. *Islands of Africa*.—Wine, fruits, the vegetable juice called dragon's blood, honey and wax, tobacco.

AMERICA.

253. *British America*.—Fish oil, hides, furs, timber, ashes, soap, and candles, flour, cattle, salt provisions, coal, gypsum, plaster of Paris.

254. *United States*.—Timber, pot and pearl ashes, wheat, cotton, fish (dried and pickled), whale and other fish oil, spermaceti oil, and candles, skins and furs, ginseng, masts and spars, oak-bark, tar, pitch, resin and turpentine, beef, tallow, hides, horned cattle, butter and cheese, pork, bacon, lard, live hogs, horses and mules, wheat, flour, Indian corn, Indian meal, rye meal, rye, oats, and other small grain and pulse, biscuit, or ship bread, rice, tobacco, cotton, wool, flax seed, soap and tallow candles, leather, wax, snuff, linseed oil, and spirits of turpentine, spirits from molasses, refined sugar, paper and stationery, lead, indigo, and other articles.

255. *Texas*.—Cotton, skins (deer, beaver, otter), hides.

256. *Mexico*. — Precious metals, cochineal, sugar, flour, indigo, provisions, vanilla, sarsaparilla, jalap, logwood.

257. *California*. — Gold, dates, figs, wine, pearls, tortoise shell, bullocks, hides, dried beef.

258. *Central America*. — Bullion, indigo, cochineal, dye-woods, sarsaparilla, balsam of Peru, hides.

259. *Colombia*. — Coffee, cocoa, indigo, hides.

260. *Peru*. — Gold, silver, bark, cocoa, cotton.

261. *Chili*. — Bullion, copper, hides, tallow, pulse, wheat.

262. *La Plata*. — Ox hides, horns, horse hides, beef, horse-hair, sheep's wool, tallow, cattle, gold, silver.

263. *Brazil*. — Sugar, coffee, cotton, hides, bullion, rice, tobacco, dye and other woods, cocoa, &c.

264. *Guiana*. — Coffee, rum, sugar, cotton, molasses, arrow-root, cloves, pepper, wood (for cabinet making).

266. *West Indies*. — Sugar, rum, coffee, cotton, cocoa, molasses, pimento, ginger, mahogany, logwood, indigo, cochineal, castor oil, sarsaparilla, pepper, &c.

REMAINING ISLANDS OF AMERICA.

267. *Newfoundland*. — Cod fish.

268. *Prince Edward's Island*. — Fish and lumber.

269. *Greenland*. — Whale oil, seal, bear and reindeer skins, eider down, &c.

OCEANIA.

270. *Malaysia*. — Nutmeg, cloves, cinnamon, pepper, coffee, rice, tin, gold, diamonds, pearls, ivory, edible birds' nests, sandal-wood, indigo, cotton, sugar, tobacco, camphor, turpentine, betel leaf, furs, lint and wool of the finest quality, whale oil, tortoise shell, birds of paradise, cocoas, ginger, sago, canes, rattans, areca-nuts, bamboos, bread-fruit, wood of various kinds for buildings and cabinet-making, teak, &c.

271. *Australasia*. — Wool, and whale-oil, tortoise-shell, bees' wax, massoy-bark, birds of paradise, trepang or sea-slug, edible birds'-nests, and gold.

272. *Polynesia*. — Pearl shells and pearls, sugar, cocoa

EXAMINATION QUESTIONS

IN GEOGRAPHY.

GENERAL QUESTIONS.

1. What is the meaning of the word Geography?
2. Into how many branches has the subject been divided?
3. Explain the meaning of the terms, Astronomical, Physical, and Political Geography.
4. Of what shape is the earth?
5. Mention some of the facts from which we conclude that the earth is a round body.
6. Explain how lunar eclipses tend to prove that the earth is of a globular form.
7. What is the visible or sensible horizon?
8. How many points does the compass contain?
9. What are the cardinal points? What are maps?
10. What side of a map is generally the north? south? east? west?
11. What is the earth's axis?
12. Mention the principal lines that are supposed to be drawn upon the earth's surface.
13. Explain the terms, equator, parallels of latitude, meridian.
14. What is meant by the latitude and longitude of any place in the earth's surface?
15. What are the tropics? the arctic and antarctic circles?
16. Name the zones into which the earth's surface is supposed to be divided.
17. What are the two great natural divisions of the earth's surface?
18. Mention the terms that are applied to the various portions of land and water.
19. What is a continent? an island? a peninsula? an isthmus? a coast? a shore? a promontory? a cape?
20. Name the great oceans. Give their boundaries.
21. Give some of the examples of seas — of gulfs — of bays.
22. What is a harbour? a road or roadstead? a creek?
23. Give examples of straits — channels — a frith or firth.
24. What are constant and occasional currents?
25. Name some of the largest lakes and rivers.
26. Name the principal mountains.

27. What are upland and lowland plains? valleys? deserts?
28. What is the estimated extent of the earth's surface?
29. Mention the number of square miles of dry land and of water upon the earth's surface.
30. What is the proportion of land and water in each hemisphere?
31. Give examples of the triangular shape of large masses of land.
32. Mention some of the largest peninsulas in the world.
33. What is the area of Europe? Asia? Africa? North America, with the West India islands? South America? Oceania?
34. What is the estimated number of human beings?
35. How many inhabitants are there supposed to be in Europe? in Asia? in Africa? in America? in Oceania?
36. Name the five classes into which mankind have been divided.
37. What are the distinguishing features of the Caucasian race? the Mongolian? the Ethiopic? the Malay? the American?

EUROPE.

GENERAL DESCRIPTION.

1. Between what parallels of latitude does Europe lie?
2. What degrees of longitude limit it on the east and west?
3. What are the boundaries of Europe on the north? south? west? east?
4. What is its length and breadth? its area in square miles?
5. How is it divided in respect to its natural features?
6. What is the length of its coast-line?
7. Name the principal seas of Europe. Where are the White and Baltic Seas situated? State what is said of the Mediterranean Sea. How are different portions of the Mediterranean distinguished?
8. Where is the Adriatic Sea situated? the Archipelago? the Levant? Where is the Sea of Marmora situated? the Sea of Azov? the Caspian Sea?
9. Where is the North Sea situated? the German Ocean? the Zuyder Zee? the English Channel? the Irish Sea? Mention some of the large gulfs and bays of Europe.
10. Where is the Gulf of Lyons situated? the Gulf of Genoa? the Bay of Naples? the Gulf of Taranto? the Gulf of Corinth or Lepanto? the Gulfs of Venice, Trieste, and Fiume?
11. Where are the Straits of the Sound? the Great Belt? the Little Belt? What does the Straits of Dover connect? Where are the Straits of Gibraltar? the Straits of Bonifacio? the Straits of Messina? the Strait of the Dardanelles? the Channel of Constantinople, or the Bosphorus?

- and Finisterre? Cape Roca? Cape St. Vincent? Cape Trafalgar? Cape Tarifa? Cape Spartivento? Cape di Leuca? Cape Passaro? Cape Matapan? Where is Cape Wrath? the Land's End? the Lizard Point? the North Foreland? Malin Head? Cape Clear?
12. Where is the Peninsula of Scandinavia? of Jutland? the Spanish Peninsula? Italy? Greece? the Crimea? Where is the Isthmus of Sleswig? of Corinth? of Perekop?
 13. Name the islands in the following seas, viz.:—In the Arctic Ocean? In the Atlantic Ocean? In the Baltic Sea? In the North Sea? In the English Channel? In the Bay of Biscay?
 14. What are the principal mountain ranges on the continent?
 15. Mention the active volcanoes. The most remarkable table lands.
 16. Name the most remarkable plains and valleys.
 17. What are the most extensive deserts or wastes of the continent?
 18. What European rivers fall into the Arctic Ocean? into the Baltic? into the Atlantic from Western Europe?
 19. What British rivers flow eastward into the Atlantic and its branches? what rivers flow westward?
 20. Name some of the large lakes in Russia. In Finland. In Lapland. In Sweden. In Switzerland. In Italy. In Hungary.
 21. Name the climatal zones into which Europe may be divided.
 22. What are the most important mineral productions?
 23. Name some of the countries distinguished for their metals.
 24. What metals are obtained from the Oural mountains?
 25. Mention some of the chief vegetable productions south of the 38th parallel.
 26. What plants are limited in their range northward by the parallel of 44° ?
 27. What are the most remarkable forest trees to the south of 44° ?
 28. What is the northern limit of the growth of bread-corns?
 29. What parallels limit on the north the growth of the oak? the ash? the beech and lime? the firs and pines?
 30. Mention some of the trees and shrubs met with in the Alps. In the Pyrenees.
 31. Name some of the larger wild animals, and the regions they inhabit.
 32. What are the most useful domestic animals?
 33. Mention the larger birds of prey, and the countries they inhabit.
 34. Mention some of the song birds.
 35. What are the principal fishes inhabiting the oceans and seas?
 36. To which of the five races of mankind do the European belong?
 37. Name the families into which the Europeans are grouped.

POLITICAL GEOGRAPHY.

39. What are the two great natural divisions of Europe? and what countries are included in these divisions?
40. How many political divisions does Europe at present (1850) contain?
41. What states stand in the first political rank? in the second? in the third?
42. What are the classes into which the different governments may be arranged?
43. Name the insular countries with their capitals and situations.
44. What are the countries of western? of southern? of eastern? of northern? and of central Europe?
45. Name the capitals of these countries, and their situation.
46. In what countries are the inhabitants chiefly Protestants? Roman Catholics?
47. In what country is the "Greek Church" established?
48. In what country is Mahomedanism professed?
49. Mention some of the most densely populated countries.

THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.

50. Name the countries which make up the United Kingdom of Great Britain and Ireland.
51. Give the greatest length and breadth of Great Britain.
52. Describe the general features of England.
53. What are the principal mountain ranges?
54. Name some of the largest rivers — lakes — islands.
55. Give the names and chief towns of the northern counties, the western, the north midland, the south midland, the eastern, the south-eastern, the southern and the south-western.
56. What are the principal cities and towns?
57. In what localities is the cotton manufacture carried on?
58. Where are the seats of the woollen manufacture?
59. Mention the towns in which the silk and lace manufactures are carried on.
60. Where are hardware, firearms, and earthenware principally manufactured?
61. What county is noted for the manufacture of shoes? what county for cordage?
62. From what counties do we obtain coal?
63. From what counties do we procure lead? zinc? copper?
64. Name the large seaport towns.
65. What is said of London? Liverpool? Bristol? Newcastle? Sunderland? Portsmouth?

67. What are the chief manufacturing towns? State what manufacture is carried on at each.
68. For what are Oxford and Cambridge remarkable?
69. What is the area and population of England? Wales? Scotland? Ireland?
70. Name the counties in which a large proportion of the inhabitants are engaged in agriculture? In manufactures?
71. What is the amount of taxes collected in England? Scotland? Ireland?
72. What is the number of trading vessels belonging to the United Kingdom?
73. How many miles of canals are laid down in England?
74. What is the estimated cost of the railways in England?
75. What is the value of the exports of the United Kingdom? of the re-exports? of the imports?
76. What is the amount of the national debt?
77. Of how many men does the regular army consist?
78. How many ships of the navy are employed in time of peace?
79. How many seamen and marines are there usually in the royal navy?
80. By whom are the laws made? By whom administered?

WALES.

81. Describe the natural features of Wales.
82. What counties produce coal and iron?
83. For what are Merthyr Tydvil and Swansea remarkable?
84. In what part of Wales are there copper mines?
85. For what manufacture is Welshpool noted?
86. By what race of people is the country chiefly inhabited? what language do they speak?
87. How many counties are there in Wales?
88. Name the northern counties. The southern.
89. What large island forms one of the counties of Wales?
90. What is the population of Wales?

SCOTLAND.

91. Describe the natural features of Scotland.
92. Name some of the lakes — the islands.
93. Into how many counties is Scotland divided?
94. Name the northern counties. The middle. The southern.
95. What chain of mountains occupies the north of Scotland?
96. What is said of Edinburgh? of Glasgow? Aberdeen? and Greenock?
97. What grain is largely grown in Scotland?
98. What are the principal manufactures?
99. Where are they carried on?
100. What are the principal fisheries?

IRELAND.

101. Describe the natural features of Ireland.
102. What is said of the coast-line?
103. What are the chief exports?
104. Name the four large political divisions of Ireland?
105. How many counties are there?
106. Name those in the province of Leinster. Ulster. Munster.
Connaught.
107. Name the principal mountains, rivers, and lakes.
108. Where is the linen manufacture chiefly carried on?
109. What is the established religion?
110. Name the universities.
111. Where are the Queen's colleges situated, and for what are they
designed?
112. What is said of Dublin?
113. Name the principal ports and seats of commerce.

FRANCE.

114. What is said of the country and the people? The climate?
115. What are the principal mountain ranges?
116. Name the chief rivers — the islands.
117. Where is the canal of Languedoc situated?
118. Mention the wine districts.
119. In what manufactures do the French excel?
120. How was France divided after the revolution of 1789?
121. Mention some of the chief cities.
122. Relate what is said of Paris.
123. For what manufacture is Lyons celebrated?
124. Mention some of the other manufacturing towns.
125. What are the chief seaport towns?
126. State what you know of the history of France
127. Who was Louis Philippe?
128. Who is now president of France?

RUSSIA.

129. What is said of the natural features of Russia?
130. Name its largest rivers.
131. What form of government is there in Russia?
132. What is said of Siberia? What climate is there in Russia?
133. What are the principal towns?
134. Relate what is stated of Petersburg. What is said of Moscow?
135. What are the principal means of internal communication?
136. What are the chief articles of export from Petersburg and
Odessa?

GERMANY.

137. What countries are comprised in Germany?

139. Mention some of the principal vegetable productions.
140. Where are the wine and corn districts?
141. Name some of the largest rivers.
142. What metals does Germany produce?
143. What fabrics are chiefly manufactured?
144. For what manufacture is Bohemia celebrated?
145. To what town is the shipping limited?
146. What are the seaports on the Adriatic?
147. Give the **Provinces of Austria** — of **Prussia** — of the **Minor States** — with the names and situation of the chief towns.
148. What form of government is there in Austria? in Prussia?
149. Give the **Minor States** with their respective governments.
150. What is meant by the **Germanic Confederation**?
151. State what you know about the **Federative Diet**.
152. What districts generally are **Protestant**? **Roman Catholic**?

AUSTRIA.

153. What countries are comprised in Austria?
154. What country in Western Europe formerly belonged to Austria? What is the population of the empire?
155. What is the prevailing form of religion?
156. Describe the geographical position of the **Archduchy of Austria**.
157. Mention some of the chief cities.
158. Relate what is said of **Vienna**, the capital.
159. What is said of **Bohemia** and **Moravia** and their capitals?
160. Describe the natural features of **Hungary**.
161. When did the **Hungarians** endeavour to throw off their allegiance to Austria?
162. What towns form the conjoint capital?
163. What are the remarkable salt mines?
164. What portions of **Italy** belong to Austria?

PRUSSIA AND THE OTHER GERMAN KINGDOMS.

165. Name the provinces of **Prussia** with their chief towns.
166. Upon what sea has **Prussia** a coast line?
167. Name the rivers which traverse **Prussia**.
168. What are the principal exports?
169. What are the geographical features of **East and West Prussia**?
170. Name some of the largest towns.
171. What is the chief article of export from **Dantzic**?
172. Describe the geographical features of **Brandenburgh**.
173. What renders this province historically remarkable?
174. What is the capital of the province? Why is **Potsdam** remarkable?
175. Give the natural features, chief cities, area, and population of **Pomerania** — of **Silesia** — of **Prussian Saxony**.
176. Mention the territories which compose the **Rhenish provinces**.

177. What are the geographical features of the country watered by the Rhine and Moselle?
178. What is the wine produced on the banks of the Rhine called?
179. What is said of Cologne? of Aix-la-chapelle? of Treves?
180. When was the power of the king limited?
181. What is the state of education in Prussia?
182. What states are united with Prussia in the commercial union?
183. What advantage to the states is this union?

BAVARIA.

184. By whom and in what year was Bavaria raised to a kingdom?
185. What is its population? What is the form of constitution?
186. State what is said of Munich, and give its population.
187. For what was Nuremberg formerly remarkable?
188. Name some other town in the kingdom.

SAXONY.

189. By whom, and when, was Saxony created a kingdom?
190. What duchy was formerly annexed to it?
191. What is said of the people?
192. What is the population?
193. What is the capital, and what is said of it? the population?
194. For what is Leipzig remarkable?

WURTEMBERG.

195. Who created it into a kingdom?
196. Give its chief cities.
197. What is the form of government?
198. State the population.

HANOVER.

199. Describe its geographical features.
200. What mountain chain borders it on the south-east?
201. What king of England was elector of this country? Who is now the king?
202. What is the amount of population?
203. Name the capital and other chief towns.

THE SMALLER GERMAN STATES.

204. Mention some of the smaller states.
205. State what is said of Baden — of Hesse-Cassel — of Hesse-Darmstadt — of Brunswick.
206. What is said of Weimar? — of Nassau, Mecklenburg-Schwerin.

207. Relate particularly what is said of Saxe-Coburg-Gotha.
 208. What illustrious person is a native of the principality?
 209. Name the free cities, and relate what is said of each of them?
 210. Where does the Diet assemble?

SPAIN.

211. Name the mountain ridges that traverse the interior.
 212. In what direction do the mountain chains run?
 213. What is the nature of the country between the mountain chains?
 214. What is the character of the southern plains?
 215. What mountains separate France and Spain?
 216. What cause has been assigned for the poverty of the country?
 217. What is the capital? State what is said of it.
 218. Name the largest trading town of Spain.
 219. Name the commercial towns.
 220. From what period may the decline of Spain be dated?
 221. What possessions remain to Spain in America?
 222. To what nation does Gibraltar belong? When was it captured?
 223. Name the Balearic Isles.

PORTUGAL.

224. What is said of the position of Portugal? of its surface?
 225. Name the principal rivers.
 226. Of what religion are the inhabitants?
 227. What are the chief exports of the country?
 228. In what town is the wine trade chiefly carried on?
 229. With what countries does Portugal principally trade?
 230. Name the Portuguese colonies. For what is Madeira celebrated?
 231. Mention the islands in the Atlantic which belong to Portugal.
 232. What extensive country in South America once belonged to Portugal?

HOLLAND.

233. What is the general aspect of the country?
 234. By what means have the inhabitants encroached upon the bed of the sea?
 235. What are the means of internal communication?
 236. When did Holland become independent of Spain?
 237. When was the kingdom of the Netherlands formed?
 238. When was Belgium established into a kingdom?
 239. What is said of Amsterdam? of the Hague? of Rotterdam?
 240. Name the other large towns.
 241. For what is the soil remarkable? Name the chief manufactures.
 242. What fisheries are carried on?

BELGIUM.

244. In what respect is Belgium like Holland?
245. What are the means of internal communication?
246. Who is the present sovereign?
247. Name the provinces of Belgium.
248. Name its capital and state. What is said of it?
249. What manufactures are carried on in the capital?
250. For what is Antwerp remarkable?
251. State what is said about Ghent, Bruges, Louvain, Mechlin, Liege, Namur, and Ostend.
252. For what manufactures is Belgium celebrated?

DENMARK.

253. Name the countries which make up the kingdom of Denmark.
254. What islands in the Atlantic belong to this kingdom? What portion of America?
255. What is the general feature of the country?
256. Give the capital, and its situation.
257. Mention what is said of this city. What is Elsinore?
258. For what is Iceland remarkable?
259. Describe the natural features of the country.
260. What is the character of the inhabitants?
261. Upon what do they depend for food?
262. For what is Greenland celebrated?
263. Name the Danish possessions in the West Indies.

SWEDEN AND NORWAY.

264. What countries comprise the kingdom of Sweden?
265. Give a description of the natural features of the country.
266. Name the most northern part of the kingdom.
267. What is the character of the Laplanders?
268. What is their principal article of food?
269. What mode of conveyance is used in the country?
270. Name the three grand political divisions of Sweden.
271. Give the chief towns, and what each is remarkable for.
272. State what is said about Stockholm. What is its population?
273. In what does the chief wealth of Sweden consist?
274. When was Norway united to Sweden?
275. Describe the natural features of Norway.
276. Name the chief towns. What is the Mællstrom?
277. How are the inhabitants supplied with food?
278. What articles form the chief exports and imports?

SWITZERLAND.

279. What is said of the surface of the country?

281. Name the highest mountain of the range.
282. Name the principal lakes.
283. What is said of the vegetation of the Swiss valley?
284. Name the rivers flowing through Switzerland.
285. What is said of the Swiss character?
286. Name the cantons into which the country is divided.
287. What are the principal towns?
288. Which of them formerly belonged to Prussia?
289. What are the chief exports?
290. What manufactures are carried on?

ITALY.

291. What is said of the surface of the country?
292. What mountains bound it on the north?
293. What ranges run through the country?
294. State what is said of Vesuvius and Etna.
295. Name the principal rivers.
296. What is said of the city of Naples?
297. What is its population? What is the class called Lazzaroni?
298. Describe the geographical features of Sicily.
299. Mention some of its productions.
300. Name its capital, and give its population.
301. Mention other towns, and state what is said of them.
302. To what kingdom does Sicily belong?
303. What is said of the island of Sardinia? Name its capital.
304. Mention the continental possessions of the king of Sardinia.
305. What is said of Turin? of Savoy? of Genoa?
306. Where are the States of the Church, or papal dominions?
307. State fully what is said about Rome.
308. Where is Tuscany situated? What is its ruler styled?
309. For what is Florence celebrated?
310. Describe its natural features. Of Austrian Italy.
311. What are the principal productions?
312. What is said of Milan? Of Venice?
313. Where is the duchy of Lucca situated?
314. For what is the territory distinguished?
315. For what is the town of Lucca remarkable?
316. State what is said of Parma and Placentia.
317. To what territory do they now belong?
318. State what is said of Modena, and give its population.
319. Where is Monaco situated? Under whose protection is it?
320. What are the industrial occupations of the inhabitants?
321. What form of government has San Marino?
322. How are the inhabitants chiefly employed?
323. What offer did Napoleon make to the government?
324. Where is Malta situated? To whom does it belong?
325. To what state does Elba belong? For what is it remarkable?

TURKEY IN EUROPE.

- 326. Describe its geographical features.
- 327. What are the principal mountains?
- 328. Where is the principal part of the Turkish dominions situated?
- 329. Assign the causes for the decline of European Turkey.
- 330. What is the form of government?
- 331. Name the principal provinces.
- 332. What is the capital? and give its situation.
- 333. Give a description of the city.
- 334. Name the other provincial towns.

GREECE.

- 335. Relate what is said of the country.
- 336. How long did the Turks hold the country in subjection?
- 337. When did Greece become independent of Turkey?
- 338. What is the form of government?
- 339. What is the character of the surface of the country?
- 340. Who is the king of Greece?
- 341. Name the capital, and give its population.
- 342. Name some of its ancient, and also some of its modern towns.

THE IONIAN ISLANDS.

- 343. How are they situated with respect to Greece?
- 344. Mention the several islands.
- 345. What is the form of government?
- 346. Under whose protection are the islands?
- 347. What is their general aspect?
- 348. What are the chief productions?

ANDORRE.

- 349. Where is it situated?
- 350. What are its geographical features?
- 351. How is the surface chiefly occupied?
- 352. What is the form of government?

COMMERCIAL MARITIME CITIES AND TOWNS.

- 353. Name those on the shores of the Baltic and its branches.
- 354. Name the maritime towns of England.
- 355. Those of Scotland? Those of Ireland? Those of Spain and Portugal? Those of France, Italy, and Austria? Those of Greece, Turkey, and Russia?

ASIA.**GENERAL GEOGRAPHY.**

1. Between what degrees of latitude and longitude is the continent situated?
2. Give its greatest length, breadth, and area.
3. Name the oceans and seas that bound it on the north? east? south? west?
4. What forms its boundary on the side of Africa?
5. State fully what is said of the general aspect of Asia, mentioning its highland and lowland regions.
6. In what respects do the northern and southern regions differ?
7. Mention its seas, bays, and gulfs, in the Arctic Ocean—in the Pacific—in the Indian Ocean.
8. Name its straits and channels.
9. Give its promontories and capes on the north—east—south—west.
10. Name its large peninsulas and isthmuses.
11. Trace out the island groups on the eastern, southern, and western shores.
12. Name the larger islands in the following groups, viz., the Aleutian or Kurile Islands—the islands of Japan—the Philippines—the Sooloo—the Moluccas.
13. Point out the islands of Formosa, Hainan, and Ceylon.
14. In what direction does the great mountain system of Asia run?
15. Trace the mountain systems, beginning on the north east.
16. Name the mountain chains which surround and diverge from the great central plateau.
17. What mountain ranges are supported upon the great plateau?
18. Name the ranges of western and southern Asia.
19. Name the countries comprising the central plateau.
20. Point out the plateau of Iran—of Arabia—of Anatolia—of the Deccan.
21. Point out the regions of active volcanoes.
22. Name and point out the most extensive plain in Asia.
23. What are the steppes? Name and point them out.
24. Trace out the plain of China—of Hindostan—of Seinde—of Mesopotamia—of Pegu—of Siam.
25. Name and point out the deserts of Asia.
26. Name the large rivers falling into the Arctic Ocean—into the Pacific Ocean—into the Indian Ocean and its branches—into the Mediterranean and its branches—into the Caspian sea.

28. Mention the lakes in Central and Western Asia.
29. What is said of the soil, climate, and minerals of Asia?
30. Where are diamonds found, and where precious stones?
31. Mention some of the principal metals.
32. State what is said of the vegetation generally of Asia.
33. Into how many botanical regions may the country be divided?
34. Over what tract does the first botanical region extend.
35. What is said of the climate of this region?
36. What country is included in the second region?
37. What does the third region comprise?
38. What are the forest trees of this region?
39. What countries are embraced in the fourth region?
40. Describe fully the vegetation of this region.
41. What countries comprise the fifth botanical region? Name its forest trees and shrubs; also its grains.
42. Which is the most plentiful grain?
43. Name the three great animal zones.
44. Name the animals of the northern, central, and southern zones.
45. Mention some of the birds of prey.
46. In what countries are parroquets found?
47. Mention some of the most important of the domestic animals.
48. In what countries are the elephant, camel and reindeer used as domestic animals?
49. In what countries are noxious animals found?
50. What is said of the insect tribes?
51. Name the principal tribes of the human family.
52. What tribes belong to the Caucasian race?
53. What tribes belong to the Mongolian race?

POLITICAL DIVISIONS.

54. Mention the different countries of Asia, in the order of their political importance.
55. Name the countries comprising the Chinese Empire, and give their capitals.
56. What countries are embraced in Russia in Asia?
57. Mention their chief towns.
58. Name the chief towns of Persia — of Beloochistan — of Turkestan — of the Ottoman Empire — of Arabia.
59. Mention the principal islands, with their chief towns.

THE CHINESE EMPIRE.

60. Name the three great divisions of which the empire consists.
61. In what part of China are Peking, Nankin, and Canton?
62. Name some of the fertile regions of Little Bucharía. The capital.
63. Describe the geographical position and features of Thibet.

64. Name some of the large rivers of China.
65. What are the principal natural productions of China?
66. Mention the more important manufactured articles.
67. What gave occasion to the war, in 1840, between the English and Chinese?
68. What Chinese island belongs to Britain?
69. To what ports have the English access?
70. State what is said of the tea plant.
71. What is said of the amount of population? of the extent of the dominions? of Peking? of Nankin? of Canton? of the Great Wall and of the Great Canal?
72. What is said about the art of printing? Of literature?
73. By whom were the Scriptures translated into Chinese?
74. Mention what arts the Chinese claim to be the inventors of.
75. What is the religion of the Chinese?
76. In what light is the sovereign regarded?

RUSSIA IN ASIA.

77. Mention the countries comprised in Asiatic Russia.
78. Name the two great governments. The principal cities.
79. ~~What are the chief productions?~~ Name the large rivers.
80. Mention the countries around the Caspian Sea.
81. What mountain ranges traverse these countries?
82. For what are the Circassians celebrated?
83. From what nation has most of the Russian territory been conquered?

INDIA.

84. Name the grand natural divisions of India.
85. What is comprised in the northern division—the central—the southern?
86. Name the finest and most populous region of India.
87. By what rivers is it watered?
88. What geographical figure is the southern portion of India?
89. Name the hills which run through this portion.
90. How are the eastern and western coasts distinguished?
91. What table lands are in the interior?
92. What are the most important productions of the southern part?
93. Name the mountain territories of Hindostan: their capitals.
94. Give the following territories, with their capitals, viz., the Gangetic—the Sindetic—the central—and the southern?
95. Mention the British provinces in the *Eastern Peninsula*.
96. Give the provinces of the Birman Empire.
97. What is said of the natural features of the country?
98. Name the most important productions.
99. Relate what is said of the character of the Hindoos.

100. What do they¹ worship, what is said of their religious practices?
101. Mention the castes into which the Hindoos are divided?
102. How is British India divided?
103. What is said of the presidency of Bengal?
104. What is its chief city? State fully what is said of it and other large towns.
105. Where are the finest muslins manufactured?
106. State what districts are comprised in the *Presidency of Madras*.
107. What town is the chief seat of the manufactures of calicos and gingham?
108. What districts comprise the *Presidency of Bombay*?
109. State the position of Bombay, and for what the city is remarkable. Name other large towns in this presidency.
110. Who are the Seikhs? Who was their celebrated chief?
111. For what manufacture is Cashmere famous?
112. To whose dominions has the Seikh territory been annexed?
113. Give the geographical features of the Sinde territory.
114. What was the character of its rulers?
115. To whom does the territory now belong? Give its chief towns?
116. Name the India powers held in vassalage by Britain.
117. Where is Mysore situated?
118. Mention some of the other dependencies of Britain.
119. What territory is held by the Rajpoot chiefs?
120. What is the character given of the natives?
121. Mention the powers independent of Britain.
122. Name the capital of Scindiah.
123. State the geographical position and features of Nepaul.
124. What is said of the people and of the king? What is the capital of the territory?
125. How is British India ruled?
126. What are the native soldiers called?
127. What is said about the trade of India?
128. What are the valuable productions of the Laccadive and Maldivé Islands?
129. What is said of Ceylon? To whom does it belong?
130. Name its capital, and its other large towns.
131. What remarkable spice does it produce? Mention another article of commerce the island produces in abundance.
132. What large wild animals are found here?
133. For what is the sea between it and the continent celebrated?

INDIA BEYOND THE GANGES.

134. What countries are comprehended under this general name?
135. When were the British territories obtained?
136. Name the countries of which they consist.
137. What is said of the general aspect of the country?
138. In what country are there forests of the tea plant?

139. Where is Singapore situated? For what is it remarkable?
140. Mention some commercial towns founded by Britain.
141. What territories compose the Birman empire?
142. By what large river is the empire traversed?
143. What valuable timber is produced?
144. What is the present capital, and what the former?
145. Where is the principal trade carried on?
146. Describe the geographical features of Siam.
147. What people conducts the cultivation and trade?
148. For what is Bangkok, the capital, remarkable?
149. For what is Siam celebrated?
150. Name the countries which have recently been subjected to Cochin China, or Anam.
151. Name the principal river in the country.
152. What gums are yielded by the forest trees?
153. Mention the most fertile and populous of these countries.
154. Point out the geographical position of the Andaman and Nicobar islands, and state what is said of them.

PERSIA.

155. What are the boundaries of Persia? The chief towns?
156. Describe the geographical features of Persia.
157. How is the trade carried on between Turkey and India?
158. What are the most valuable products of Persia?
159. For what are the Persians distinguished?

AFGHANISTAN.

160. What is said of the aspect of the country, and of the people?
161. Relate what is said about Shah Shujah — Runjeet Singh — the Shah of Persia.
162. State fully what is said about the invasion of the country by the British army and the causes which led to this circumstance.
163. When did the British army enter, and when did it finally leave the country?

INDEPENDENT TARTARY.

164. For what is this region celebrated?
165. What are the geographical features of the country?
166. What animals are chiefly reared?
167. Name the large rivers, and the sea into which they flow.
168. Name the chief divisions of Independent Tartary.
169. State what is said about Great Bucharía. Name the capital.
170. Point out the position of Khiva, and give its former name.
171. Who claims sovereignty over the desert?
172. Relate minutely what is said of the Turcoman tribes.
173. What tracts are occupied by the Kirgishes? What is their

ASIATIC TURKEY.

174. Of what countries is it composed?
175. What is their present state under Turkish government?
176. Name the principal divisions of the empire.
177. By whom are these divisions governed?
178. When and by whom were the Egyptian forces expelled?
179. Mention the principal mountains, rivers, and lakes.
180. Describe the geographical features of Asia Minor.
181. Name its capital, and its principal exports.
182. What is said of Balbec and Palmyra?
183. For what is Palestine particularly distinguished?
184. What is said of its geographical features?
185. Describe the situation of Jerusalem, and state minutely what is said of it.
186. Give a description of the Valley of Jehoshaphat.
187. Describe the position of Mount Moriah and Mount Zion.
188. Name the four hills upon which Jerusalem was built.
189. What building now stands upon the site of the temple?
190. In whose writings do we find a pretty full account of Palestine and the city of Jerusalem?
191. What city is considered the bulwark of Syria, and for what is it famous? What is said of Jaffa and Nablous?
192. Point out Armenia. What districts are included within it?
193. What is the character of the tribes inhabiting these districts?
194. Where are the remains of the ancient Nineveh?
195. What is said of Babylon and of Bagdad?
196. At what city is the foreign trade carried on?

ARABIA.

197. Describe its geographical features.
198. What is the character of its inhabitants?
199. What is the nature of the climate?
200. How do travellers guide themselves through the deserts?
201. For what are the cities of Mecca and Medina celebrated?
202. Point out the position of Mount Sinai and Mount Horeb.
203. Where is the wilderness through which the children of Israel wandered?
204. For what vegetable production is Yemen celebrated?
205. Name its capital, and the other commercial towns.
206. What town belongs to Britain?
207. What are the common beasts of burden? Name the exports.
208. Give the general character of the Arabs. What sort of life do they lead? How are they dressed, and governed?

JAPAN.

209. Point out the islands of Japan, and name the largest of them.

- 211. Name the capital and state. What is said of it and Meaco?
- 212. For what manufactured articles is Japan celebrated?
- 213. What is said of the climate, the face of the country?
- 214. Why is the country not better known?

THE ORIENTAL ARCHIPELAGO.

- 215. Point out the islands comprised in this group.
- 216. Describe their geographical features, and name some of their productions.
- 217. Of what races are the inhabitants?
- 218. To what European nation does Java belong?
- 219. What is said of the island of Sumatra, and its inhabitants?
- 220. Give the native states and the principal Dutch settlements.
- 221. For what productions is Sumatra celebrated?
- 222. State fully what is said of Borneo.
- 223. Point out Sarawak. What is said of Sir James Brooke.
- 224. Name an island off the coast belonging to Britain.
- 225. Point out Celebes. What is the character of its inhabitants?
- 226. What islands are called the Spice Islands?
- 227. To which island is the culture of the clove confined?
- 228. Point out the Philippines, and name their capital.
- 229. What is the principal manufacture, and where is it carried on?

AFRICA.

GENERAL DESCRIPTION.

- 1. Between what parallels and degrees of longitude is this continent situated?
- 2. Give its greatest length and breadth, and the points between which the measurements are taken. What is its area?
- 3. Give its boundaries on the north, south, east, and west.
- 4. What is said of the coast line?
- 5. Name the mountain ranges on the north.
- 6. What are the geographical features of the continent to the south of the twelfth parallel?
- 7. What is said of the water communication?
- 8. Point out the seas, bays, and gulfs.
- 9. Name and point out the straits and capes on the north, on the east, and on the west.
- 10. Name and point out the islands belonging to Africa in the Indian Ocean and in the Atlantic.

11. Trace out the Great Atlas, the mountains of Kong, the mountains of the Moon, and the mountains of Abyssinia.
12. Name the mountains at the south of the continent.
13. What is said about the table-lands?
14. Point out the great African plain, and state what is said of it.
15. Name and point out the most remarkable deserts.
16. Relate fully what is said of the Sahara.
17. Name and trace the course of the rivers falling into the Mediterranean on the west and eastern coasts.
18. Name the large lakes.
19. What is said of the soil and climate of Africa?
20. What cause has been assigned for its high temperature?
21. Name the most important minerals.
22. What metal is generally diffused throughout the continent?
23. Name the largest of the forest trees, and the plants which are generally diffused throughout the continent.
24. What animals inhabit the northern, central, and southern regions?
25. Where is the ostrich found?
26. By what birds are the rivers and lakes frequented?
27. What kind of reptiles are the most numerous?
28. Name the seven different races of men.
29. What regions are inhabited by the negroes properly so called?

POLITICAL DIVISIONS.

30. Why can we not obtain an accurate arrangement of the political divisions?
31. Point out the northern, central, southern, eastern, and western states. Give their chief towns.

EGYPT.

32. Of what does Egypt consist? How is it bounded?
33. What are the three grand divisions of the country?
34. State for what this country is particularly remarkable?
35. What are the pyramids? When were they built? What is the size of the largest?
36. Name the capital, also the ports, and the principal ruins.

BARBARY.

37. Trace out its boundaries, and name the states included in it.
38. What is said of the aspect of the country?
39. What European power is now in possession of Algiers?
40. What is this nation at present endeavouring to do?

ABYSSINIA.

42. Where is this country situated?
43. Describe its geographical features.
44. By what race has the country been overrun?
45. What is said of the habits of this race?
46. What city and provinces do they possess?
47. Where are the native governments situated?

NUBIA.

48. Point out this country. By what river is it watered?
49. What is said about the rocks on the banks of the river?
50. What is the character of the people?
51. Name the principal states.
52. By whom were these states lately conquered?

CENTRAL AFRICA.

53. Of what regions is it composed?
54. What mountain ranges cross it? What rivers rise in it?
55. What is the character of the soil?
56. Name the two principal states. Point out Bornou.
57. From what countries are slaves obtained? - Where are they sold, and to whom?
58. By whom were the *countries on the lower Niger* recently explored?
59. When did this traveller die, and what was the cause of his death?
60. Describe the natural features of this region.
61. What large river rolls through this region?
62. Name the capital. What is said of the territory?
63. For what is Timbuctoo celebrated? Point out Bambarra,
64. How is gold procured? How is the internal trade carried on?
65. Point out the countries along the *western coast*.
66. Where are the French settlements?
67. What is said of the climate? What are the principal exports?
68. Name the Portuguese settlements.
69. Where is Sierra Leone situated?
70. Name the principal states. By what race were many of them ravaged? Name the islands along the coast.

BRITISH COLONIES IN AFRICA.

71. Point out the Cape of Good Hope, or Cape Colony.
72. Of what tribes is the population made up?
73. Describe the natural features of the kingdom.
74. What is the chief branch of rural industry? What is said of the fisheries? Name the chief ports.

75. Name the districts in the south-west—on the south coast—
the north-west—the interior.
76. Of what districts are Graham's Town and Fredericksburg the
capitals?
77. Name the wine and corn-growing districts.
78. When did the Dutch found a colony in South Africa? When
was it taken by the British? Point out Natal.
79. Describe its natural features. What is said of the climate?
Name the principal products. What are the chief exports?
How is the state governed? Name the capital of the
colony.

AFRICAN ISLANDS.

80. Name the largest island, and give its length and breadth.
81. Point out Bourbon. To what nation does it belong?
82. To what nation does the Isle of France belong?
83. Point out St. Helena. To what nation does it belong, and for
what is it remarkable? Where is Ascension?
84. Where are the Cape Verde Isles? To what nation do they
belong, and what are their products?
85. Point out the Canary Isles. For what is Teneriffe remarkable?
86. For what is Madeira particularly celebrated?

AMERICA.

GENERAL DESCRIPTION.

1. Between what meridians and parallels is the continent situated?
2. Give its greatest length and breadth.
3. Name the seas and oceans that wash the continent on the north,
east, south, and west.
4. When and by whom was the continent discovered?
5. How came the continent to be called America?
6. Describe its general aspect.
7. Name the five regions into which the surface of both North
and South America may be divided.
8. Name the seas, bays, and gulfs in the Arctic Ocean—on the
Atlantic Coast—in the Gulf of Mexico and the Caribbean
Sea—on the east coast of South America, and on the west
coast—on the west coast of North America.
9. Name the straits and channels on the north, east, south, and

10. Mention the capes.
11. Name the peninsulas and islands on the northern, eastern, and western shores.
12. Give the ranges of North America, of South America, and of the islands.
13. Name the most remarkable of the table lands. Name the principal volcanoes, and point out their position.
14. Name and trace out the most extensive plains.
15. State where the principal deserts are situated.
16. What is said of the American rivers?
17. Trace the course of the Mississippi. Give its length, and name some of its tributaries.
18. Name the largest rivers of North and of South America.
19. Name the largest of the North and South American lakes.
20. What is said of the soil and climate?
21. What is said about the minerals? What metals are found in considerable quantities?
22. What is said of the forests?
23. Name the principal vegetable productions.
24. Name the wild animals of North and South America.
25. What is said about the birds?
26. What is said about the vampire bat? Name the reptiles.
27. Name some of the largest, also some of the more venomous.
28. What is said about the fishes?
29. What animals abound in the tropical rivers? Where is the gymnotus or electric eel found?
30. Name the principal fisheries. Point out their locality.
31. Mention the domestic animals, and the most numerous of them.
32. Describe the peculiarities of the American race.
33. By what nations in the Old World have the United States, Canada, and Pennsylvania been colonised.

POLITICAL DIVISIONS.

34. Give the states, territories, and colonies of North America, with the capitals; also the population of the continent.
35. Name the West India Islands, with their capitals, and the European nations to whom they belong.
36. Name the subdivisions of Columbia and Guiana, and give their chief towns.
37. Name the other states of South America, with their chief towns.
38. Trace upon the map the boundaries of each state, and point out the position of each capital.

THE BRITISH POSSESSIONS IN NORTH AMERICA.

39. Name and point out these possessions upon the map.
40. Describe the geographical features of Lower Canada, how is it

41. From what European nation are the inhabitants descended?
42. Name the chief towns, and state what is said about them.
43. Trace out Upper Canada. What is said of it?
44. What are the principal exports? What are the principal means of internal communication?
45. Describe the geographical features of Nova Scotia.
46. What is said of the fishery? And of the timber trade?
47. Describe the aspect of New Brunswick. Give its capital.
48. What is said about the general appearance of Newfoundland?
49. For what fisheries is the country celebrated?
50. Name the capital. For what is it remarkable?
51. Where are the Bermudas situated, and for what are they famed?
52. Point out the colony of Balize, or Belize, and its capital.
53. Point out Russian America, and trace out its boundaries.
54. What trade is chiefly carried on in this territory?
55. Point out Greenland. To what European nation does it belong?
56. Of what race are the natives, and how are they chiefly employed?

THE UNITED STATES OF NORTH AMERICA.

57. Point out these states, and give their boundaries.
58. From what European nation were they chiefly colonised?
59. When did these colonies become independent?
60. Mention the principal exports.
61. How is the republic of the United States governed?
62. What is the "Congress," and where is it held?
63. Name the north-eastern — middle — southern — north-western — and south-western, states, with their principal towns.
64. Name the territories and districts, and give the capital of the republic and its situation.
65. Which is the largest city in the United States?
66. Mention some of the other large towns, and state particularly what is said of Washington, New York, Boston, Philadelphia, New Orleans, and Cincinnati.

THE NATIVE TRIBES OF NORTH AMERICA.

67. Point out the districts occupied by the native tribes.
68. What articles of commerce are collected from the Indians?
69. Point out the regions inhabited by the Esquimaux?
70. Name some of the islands in the Arctic Ocean discovered by Captain Parry. What is said of their climate?

MEXICAN CONFEDERATION.

71. What states are comprised in this confederation?
72. Describe the geographical features of Mexico, and mention the active volcanoes in it.

CENTRAL AMERICA.

74. What states are included under this term?
75. Describe the aspect of the country.
76. What is said of the volcanic regions and of the climate?
77. Name the principal cities.
78. What are the chief products of the Republic?
79. Where is the Mosquito territory situated?
80. What are its geographical features?
81. Name the chief towns. What is said about Bluefields?
82. What events occurred in the territory in 1848?

THE WEST INDIES.

83. Point out their position and give their subdivisions.
84. Trace out the greater and lesser Antilles.
85. Name the largest of the group, and state to what European nation it belongs.
86. Point out Hayti and give its other names.
87. Point out Jamaica. Name its chief town, and the principal productions.
88. In the smaller Antilles, point out the islands that belong to England, France, Denmark, Holland, and Sweden.
89. To what nations do the Bahamas and Curaçoa belong?
90. Give the principal productions of these islands.

SOUTH AMERICA.

91. What is the geographical figure of this continent?
92. For what is the continent particularly distinguished?
93. What mountain chain extends along its western side?
94. What large rivers flow through it?
95. Name the loftiest peaks and volcanoes.
96. What is said of the plains and of the mines?
97. What European nation conquered the finest regions?
98. Name and point out the most important of the republics.
99. Of what is the eastern portion composed? What is said of it?
100. For what product is the country distinguished?
101. Mention the parts into which Columbia has been split.
102. Point out Guiana, English, Dutch, and French.
103. What precious minerals are found in Brazil?
104. How is the country at present governed?
105. Name the capital, and other large towns. Point out Peru.
106. What is said of the eastern districts? What are the mines?
107. What is the capital, and how is its foreign trade carried on?
108. Why was Bolivia so named? When was its liberation effected?

109. What are the remarkable plains?
110. What are the pampas, what animals are reared upon them?
111. Name the capital, and the other large towns.
112. Where is Paraguay? For what is this country celebrated?
113. Point out Uruguay. Name and point out its capital.
114. Point out Chili, and relate what is said of its natural features.
115. What mines does it contain? What is said of industry?
116. Point out the capital and the chief trading towns.
117. Point out Patagonia. What is said of Terra del Fuego?

AUSTRALIA.

118. What islands does it include?
119. Describe the natural features of Australia.
120. Name and point out the most remarkable rivers.
121. State what is said of the climate.
122. What are the chief vegetable and animal productions?
123. Of what race are the native people? What is the amount of the white population?
124. Name the four districts embraced in the settled portions of Australia.
125. Where is New South Wales situated? Describe it.
126. Point out Victoria or Port Philip, and give a short description of it.
127. Point out South Australia, also Western Australia, and give a short description of them.
128. Point out and describe Van Dieman's Land, or Tasmania.
129. Point out and give a short description of New Zealand.
130. Where is Norfolk Island? What is said of it?

POLYNESIA.

131. What islands are comprehended under this term?
132. Name the principal island groups.
133. In what group is Otaheite?
134. For what are its inhabitants remarkable?
135. Point out the Friendly Isles.
136. Point out the Marquesas and Sandwich Islands.
137. For what are the Sandwich Islands particularly remarkable?
138. Point out the Caroline Islands, and name the principal of them.
139. Trace out the groups to the north and east of them.
140. Point out the Ladrone or Marianno Islands.

PHYSICAL GEOGRAPHY.

1. What is the general direction of mountain systems in the Old and the New World?
2. Trace out the mountain systems of Asia, commencing on the north-western shore of the continent.
3. Name the mountain chains that surround the great central table land.
4. Name the mountains of Western Asia.
5. Trace out the ranges of Southern Europe.
6. Trace out the detached mountain systems of Asia and Europe.
7. Point out and name the African mountain ranges.
8. Trace the mountain chains of North and South America, and name and point out the detached ranges.
9. Point out some of the most remarkable insular mountain ranges.

TABLE LANDS, OR PLATEAUS.

10. Name, point out, and give the mean elevation, of the most remarkable table lands in Asia, Europe, Africa, and America.
11. Trace out the volcanic districts of each of the great continents, and of the island groups.
12. Name the principal active volcanoes in the Old and New World.
13. What are the two different kinds of earthquakes?
14. Point out the districts in Europe recently visited by earthquakes.
15. Name and point out some of the highest mountains in Europe, Asia, Africa, America, and the Australian continent,
16. Name some of the highest altitudes reached by man,
17. Name and point out some of the principal lowland plains in each of the great continents.
18. Name and point out some of the most remarkable valleys in the Old and New World.

DESERTS

19. Point out those of Asia, Africa, America, and Australia, and state what is said about them.

RIVERS AND LAKES.

20. Define the term river, and explain how rivers are formed.
21. Explain the terms basin — water-parting, or water-shed bifurcation — upper, middle, and lower courses of rivers.
22. Explain the term development of a river, also the different kinds

23. What are tidal rivers? What is the bore?
24. Upon what does the magnitude of rivers depend?
25. What are continental, and what oceanic rivers?
26. What is said of the Atlantic and Pacific as the recipients of rivers?
27. Explain how deltas are formed.

RIVER SYSTEMS.

28. How may rivers be classified?
29. Compare the river systems of Europe, Asia, Africa, and America.
30. Trace the course of the largest rivers in Europe, Asia, Africa, and America.
31. State what is said of rivers in the Torrid and the Temperate Zones.
32. Name the larger rivers of the great continents, the countries through which they flow, where they rise, the seas into which they fall, and their mean length.
33. Name the principal lakes in the Old and New World, and give their area in square miles.

THE OCEAN.

34. What are its chief chemical and physical properties?
35. Account for its difference of colour.
36. What is said of its temperature, depth, and level?
37. How are waves produced? Explain the difference between the sea-wave and the tide-wave.
38. How are tides produced, and how often do they occur?
39. What is meant by the ebb and flow of the tide?
40. Explain how spring and neap tides are produced.
41. Trace the progress of the tide-wave in the Pacific, Indian, and Atlantic Oceans, and around the British Islands.
42. How are currents produced in the ocean?
43. Name, and trace out upon the map, the principal currents in the Pacific, Indian, and Atlantic Oceans.
44. Trace the course of the gulf-stream.
45. Trace out this current upon the map.

THE ATMOSPHERE.

46. Of what gases is it composed, and in what proportions are these gases found?
47. Mention some of the uses of the atmosphere, in the general economy of Nature.
48. What is its pressure upon every square inch of the earth's surface?
49. At what height does it cease to refract the rays of light?

51. Point out the region of the trade winds, and explain how they are produced.
52. Point out the regions visited by the monsoons, and explain why they shift from one side of the equator to the other.
53. Point out the regions of the variable winds.
54. Account for land and sea breezes. Name the principal winds.
55. Name the terms that have been applied to violent rotatory movements of the atmosphere.
56. Point out the regions visited by hurricanes and by typhoons.
57. Where is the region of calms?
58. How is evaporation from the earth's surface caused?
59. In what form is vapour suspended in the atmosphere?
60. What is the dew-point, dew, and white frost?
61. Explain the formation of fogs, clouds, and rain.
62. Relate what is said of the tropical rains.
63. Point out the rainless districts.
64. State fully what is said about the fall of rain in certain parts of Europe, Asia, Africa, and America.
65. What is the mean annual quantity of rain in Calcutta, Rome, Paris, London, Liverpool, Glasgow, Edinburgh, and Petersburg? Give the relative quantity of rain in Europe.
66. Give the proportional quantities of rain in Europe in the different seasons.
67. What is the Aurora Borealis, and relate what is said about it?
68. What is the chief cause of the difference of temperature upon the earth's surface? Point out the hottest regions.
69. Trace out the different zones, and give the breadth of each.
70. Explain the meaning of the term snow line.
71. What is meant by "climate?" and mention the causes which determine it?
72. Explain fully how each of the causes alluded to influences the climate of a country.
73. What are isothermal, isotheral, and isochimenal lines?
74. How may they be laid down upon a map?
75. Name and point out some of the coldest, and also some of the hottest countries.

MISCELLANEOUS QUESTIONS.

76. Into what three great classes is the vegetable kingdom divided?
77. Name some of the plants that belong to each class.
78. Name and trace out the limits of the vegetation zones.

91. Give the subdivisions of the class mammalia.
82. Mention the different races of mankind.
83. How many languages are said to be spoken.
84. What languages are the most polite and cultivated in Europe.
85. Mention the most widely diffused languages.
86. What are the different religions professed by mankind?
87. Name the different churches professing Christianity.
88. What nations profess Mahomedanism?
89. Of what religion are the inhabitants of most of the Asiatic and Pacific islands?
90. Mention some of the different forms of government.
91. What is a monarchy? What is a republic?
92. Mention the three grand classes into which all natural productions are arranged.
93. What is meant by the exports of a country, and what by imports?
94. Give the exports of England, of Wales, of Scotland, of Ireland of France, Switzerland, Belgium, and Holland.
95. What are the exports of Germany, of the Austrian Empire, of Prussia, of Denmark and her dependencies, of Sweden and Norway, of Russia, of Spain, of Portugal, of Italy, of Sicily, of Turkey, and of Greece?
96. Give the exports of Asiatic Turkey, of Arabia, of Persia, of India, of China, and of Asiatic Russia.
97. Name the chief exports of Africa.
98. What are the chief exports of Canada, and of the United States of North America?
99. Mention the exports of the West India Islands.
100. Give the exports of the principal states of South America.
101. What articles are obtained from Oceanica and Polynesia, particularly Australia?

ASTRONOMY.

1. THE term ASTRONOMY denotes the *nomos* or *law*, which governs the *astra*, or heavenly bodies. Its object is to investigate the magnitudes, distances, mutual relations, and motions, real or apparent, of all the visible bodies of the heavens. This wide field of inquiry has suggested a division of the subject into descriptive, physical, and practical astronomy. 1. "*Descriptive astronomy demonstrates the magnitudes, distances, and densities of the heavenly bodies, and explains the phenomena dependent on their motions, as the change of seasons, and the vicissitudes of day and night.*" 2. "*Physical astronomy explains the theory of planetary motion, and the laws by which this motion is regulated and sustained.*" 3. "*Practical astronomy details the description and use of astronomical instruments, and develops the nature and application of astronomical calculations.*" The heavenly bodies are divided into three distinct classes, or systems, viz. the solar system, consisting of the sun, moon, and planets; the system of the fixed stars; and the system of the comets."

2. *Systems of astronomy.*—There are several celebrated systems, or hypotheses, for explaining the phenomena of the heavenly bodies. The principal of these are the Ptolemaic, the Copernican, and the Tychonic. 1. The *Ptolemaic* system was so named from the famous geographer Claudius Ptolemæus, who flourished in Egypt during the reigns of the Roman emperors Hadrian and Antoninus Pius. He taught *that the earth was at rest in the centre of the universe, and that the heavens revolved round it,*

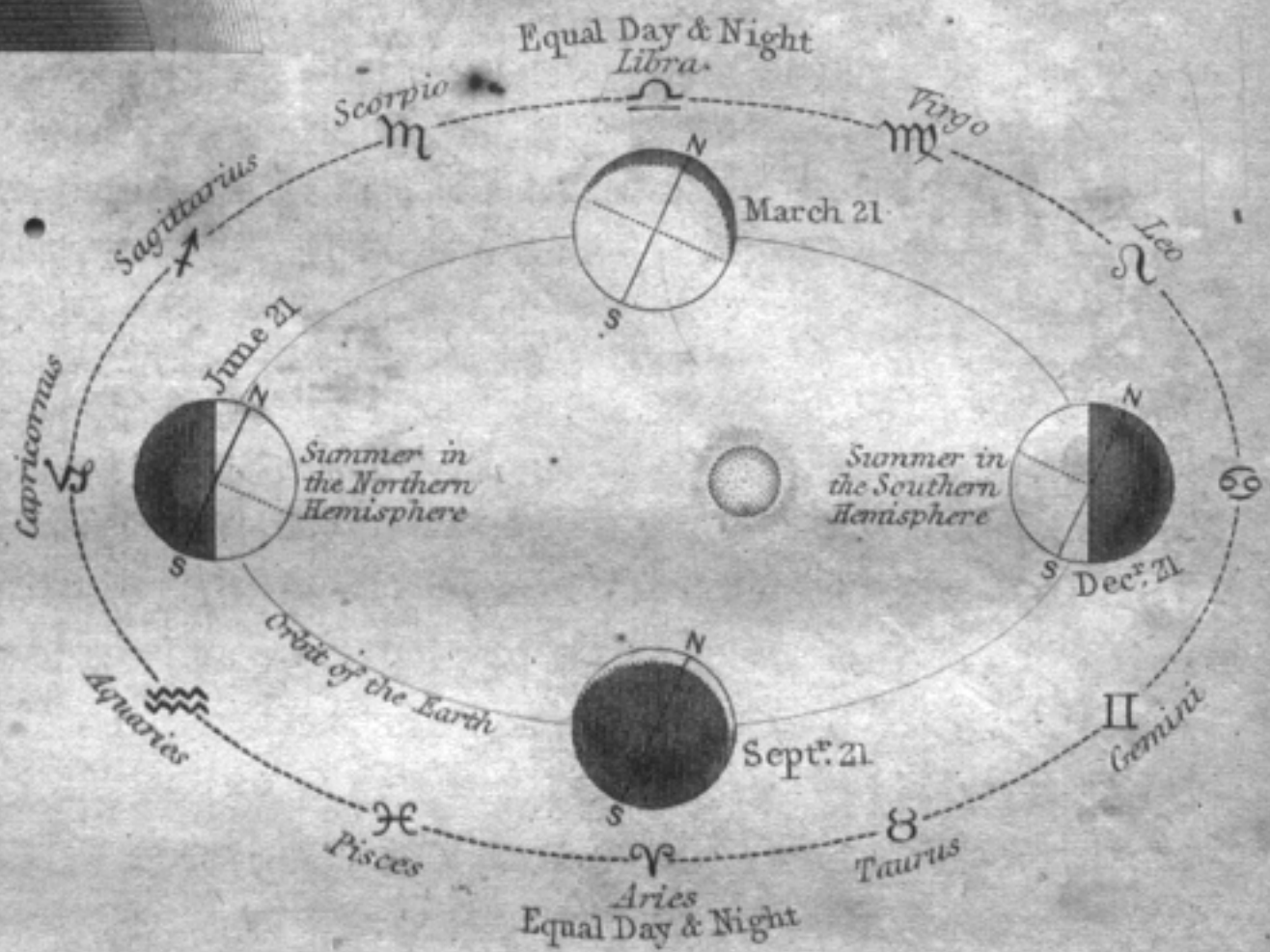
Rotundity of the Earth



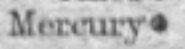
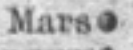
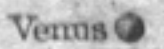
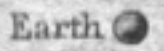
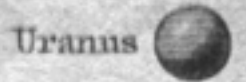
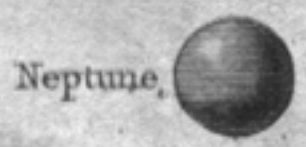
Refraction of the Atmosphere

Apparent Place
True Place

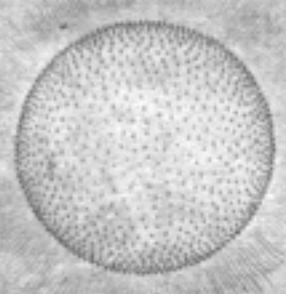
THE SEASONS



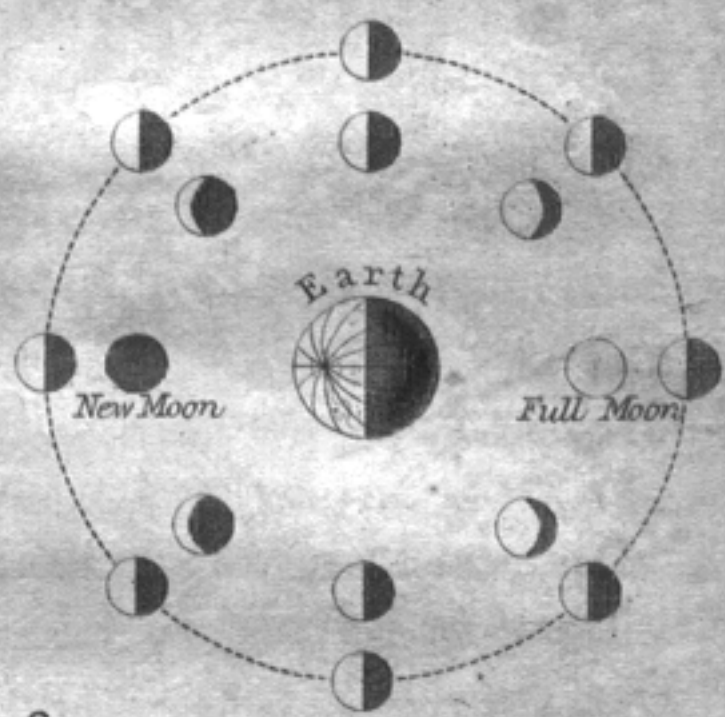
COMPARATIVE SIZE OF THE PLANETS



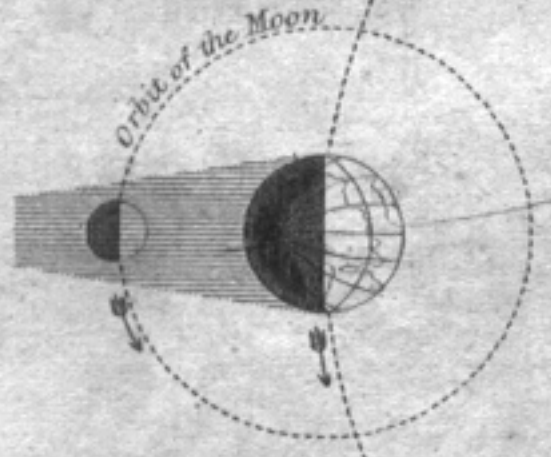
Sun



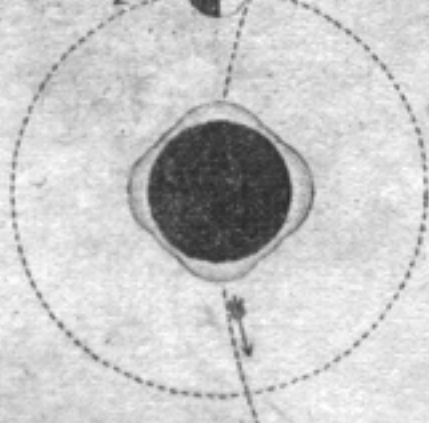
PHASES of the MOON



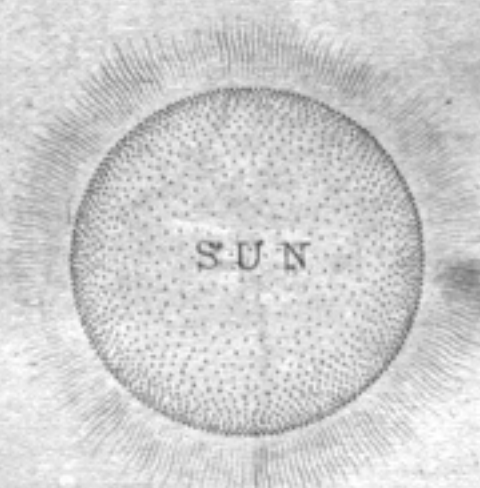
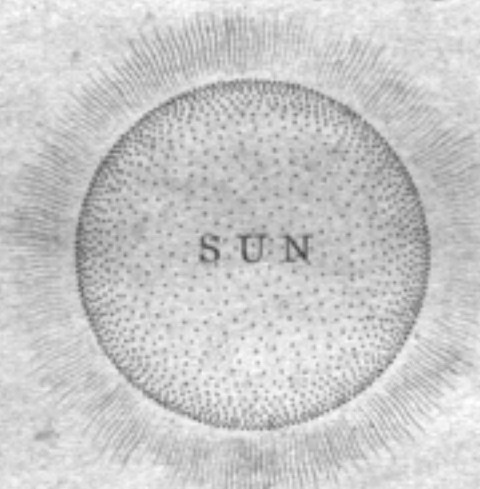
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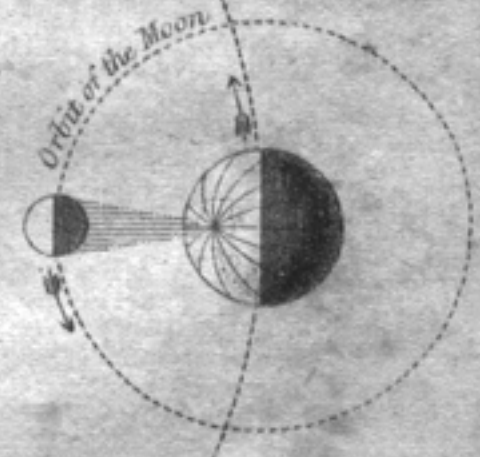
Neap Tides



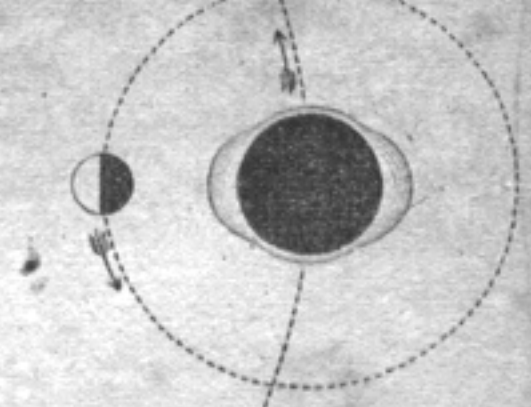
ECLIPSES



SOLAR



Spring Tides



THEORY OF THE TIDES

heavenly bodies with them. This system was believed, and enjoyed an undisputed celebrity, for 1400 years.

2. The *Copernican* system derives its name from Nicholas Copernicus, who was born A. D. 1473, at Thorn in Prussia. He taught, as Pythagoras had taught before him, *that the sun occupies the centre of the universe, and that the planets move round him* in orbits which increase in magnitude with the times of revolution. This system was established by the new arguments and discoveries of Galileo, Kepler, and Newton. The great principle on which it rests is gravity, or that force in nature by which all the planets are *attracted to the foci* of their elliptical orbits.

3. The *Tychonic* system was so named from Tycho Brahe, a noble Dane, who was born A. D. 1546, and who partly restored the system of Ptolemy concerning *the earth remaining at rest, whilst the other heavenly bodies moved round it*. He taught, however, that the moon performed a monthly revolution round the earth; that the **Sun was the centre of the orbits of Mercury, Venus, Mars, Jupiter, and Saturn**, which revolve round him in their respective periods, as he revolves round the earth in a solar year; and, accordingly, that these five planets, together with the sun, are carried round the earth in twenty-four hours. Of these systems, the Copernican is now adopted, as furnishing the most easy and obvious explanation of the various phenomena of the heavenly bodies.

THE SOLAR SYSTEM.

3. The Solar System consists of the Sun, from which it takes its name; thirty-seven Primary Planets, (twenty-nine of which are distinguished as Minor Planets,) twenty Secondary Planets or Satellites, and an unknown number of Comets.

4. The Sun, the great source of light and heat to the planetary bodies, is nearly 95 millions of miles distant from the Earth; his diameter is $111\frac{1}{2}$ times the diameter of the Earth or upwards of 882 thousand miles: conse-

of the Earth. His density is about one¹ quarter that of the Earth; and a body which weighs one pound at the surface of the Earth, would weigh 28 pounds if carried to the surface of the Sun.

5. On examining the solar disc with the telescope, it is sometimes seen to be partially covered by dark spots, differing from one another in form and magnitude. These spots move from east to west across the disc of the Sun, and seem to be confined to a region not extending more than about 30° from his equator; some of them have been observed so large as to exceed the earth four or five times in size. The period of their apparent revolution is about $25\frac{1}{2}$ days; whence, as they are supposed to belong to the solar atmosphere, it is concluded that the Sun revolves on its axis, and that the period of rotation is $25\frac{1}{2}$ days.

THE PRIMARY PLANETS.

The Primary Planets are those bodies of the Solar System which have the Sun for their common centre of motion. They all revolve about that body in the same direction, that is from west to east, in orbits nearly circular, and are all included within a narrow zone of the celestial sphere. Their number, as known at present, is seventy-nine. Eight of these are bodies of great but very unequal magnitudes, revolving at very unequal distances from the Sun. The remainder all revolve in the same region of the heavens, forming a group by themselves, and from their extreme smallness are called Minor Planets or Planetoids. The order of the Primary Planets in the system (with the exception of the more recently discovered planetoids, the orbits of several of which are not yet sufficiently known), their names, and the symbols by which the eight larger planets are designated*, are as follows:—Mercury ☿, Venus ♀, the Earth ⊕, Mars ♂,

* It was formerly usual also to designate the minor planets by special symbols, but in recent years they have become so numerous that this practice has been discontinued. The only symbol now used is a number enclosed in a circle designating the order of dis-

Flora, Melpomene, Victoria, Vesta, Euterpe, Metis, Iris, Phoebe, Hebe, Fortuna, Parthenope, Massilia, Lutetia, Thetis, Astræa, Irene, Egeria, Eunomia, Proserpine, Juno, Thalia, Ceres, Pallas, Calliope, Psyche, Themis, Hygeia, Amphitrite, Bellona, Jupiter ♃, Saturn ♄, Uranus ♅, and Neptune. Six of these, namely, Mercury, Venus, the Earth, Mars, Jupiter, and Saturn, have been known from the remotest ages; all of the others have been discovered in modern times, and are visible only by aid of the telescope.

7. The following table exhibits the diameters of the principal planets, their distances from the sun, the periods of their revolutions on their axes, and those of their revolutions round the sun:—

SYNOPTIC TABLE OF THE MOST IMPORTANT ELEMENTS OF THE SOLAR SYSTEM.

Bodies.	Mean Diameter in English Miles.	Distances from the Sun in English Miles.	Time of Sidereal Rotation.	Time of performing a Sidereal Revolution about the Sun.
			D. H. M. S.	D. H. M. S.
Mercury ☿	5,140	37,000,000	0 24 5 28	87 23 15 44
Venus ♀	7,718	69,000,000	0 23 21 7	224 16 49 8
Earth ⊕	7,916	95,000,000	0 24 0 0	365 6 9 12
Mars ♂	4,093	144,000,000	0 24 39 21	686 23 30 41
Jupiter ♃	90,000	494,000,000	0 9 55 50	4,332 14 2 8
Saturn ♄	76,068	906,000,000	0 10 29 17	10,759 5 10 32
Uranus ♅	34,292	1,800,000,000	0 9 30 0	30,686 19 41 59
Neptune ♆	42,000	2,869,000,000	unknown.	60,624 0 0 0

The Moon's diameter is 2160 English miles, her mean distance from the Earth 237,519, and the period of her revolution 27 d. 7 h. 43 m. 5 s. The Moon turns round her axis in the same time that she revolves in her orbit round the Earth.

8. *Mercury* is the planet nearest to the Sun, his mean distance from the Sun being about 37 millions of miles. He performs his revolution in rather less than 88 days; and his rotation on his axis is supposed to be performed in about 24 hours, 5½ minutes. His diameter is only 3140 miles and his magnitude about one-sixteenth part

sequence of which he can very rarely see with the naked eye in our climates.

9. *Venus*, the next in order, revolves at the mean distance of 69 millions of miles from the Sun; the time of her revolution is $224\frac{7}{10}$ days, and the length of her day, or her time of rotation, 23 hours, 21 minutes, 7 seconds her diameter is 7700 miles, and her magnitude about nine-tenths of that of the Earth. Venus is alternately the morning and evening star. In the telescope she sometimes appears horned, sometimes gibbous, like the Moon.

10. Mercury and Venus are called *inferior* planets, because their orbits are enclosed in that of the Earth. The others are called *superior* planets, because their orbits enclose the orbit of the Earth.

11. The *Earth*. It was proved by Copernicus, who died in 1543, that the Earth is also a planet, the third in order from the Sun; and that the celestial motions which we observe are only apparent, and arise from the motion of the Earth in its orbit, and its rotation about its own axis. The mean distance of the Earth from the Sun is 95 millions of miles, and its revolution is performed in nearly $365\frac{1}{4}$ days; so that the velocity with which it moves is about 19 miles in a second. The Earth is not a perfect sphere, being a little flattened at the poles; its mean diameter is 7926 miles. The axis of the Earth is inclined to the plane of the ecliptic, or plane in which the annual motion is performed, whence the equator does not coincide with the ecliptic; the two planes make with each other an angle of about $23\frac{1}{2}$ degrees. If the equator coincided with the ecliptic, the heat and cold in each part of the Earth would be the same throughout the whole year. In fact, however, the northern part of our globe inclines towards the Sun during one half of the year, and the southern part during the other half. By this simple arrangement, the Earth, while revolving in its orbit, and presenting itself differently to the Sun, at different times of the year and day, undergoes all the gradations of heat and cold, the varieties of day and night, and the grateful

miles from the Sun; his revolution is performed in about 687 days, and his rotation on his axis in 24 hours 39 $\frac{1}{2}$ minutes; his diameter is only 4100 miles, or little more than half the diameter of our Earth. He is easily distinguished by his dull red appearance.

13. The planetoids are very small bodies, revolving between the orbits of Mars and Jupiter, and are never visible excepting through a good telescope. Their mean distances from the Sun vary between 200 and 300 millions of miles, Flora being the nearest in place to that luminary. Ceres was discovered in 1801, Pallas in 1802, Juno in 1804, and Vesta in 1807. The others have all been discovered within a much more recent period, between the years 1845 and 1861. The great (and still increasing) number of these bodies, of which modern telescopic observation has revealed the existence, renders it unnecessary, in a work like the present, to attempt a complete enumeration of the names that have been conferred upon them.

14. *Jupiter*. The mean distance of this planet from the Sun is above 494 millions of miles, and the time of his revolution 4332 days or nearly twelve years. The length of his day is only 9 hours and 56 minutes. Jupiter is the largest of all the planets. His diameter is about 90,000 miles; and his magnitude is 1280 times that of the Earth.

15. *Saturn* revolves at the distance of 890 millions of miles from the Sun, which is about 9 $\frac{1}{2}$ times the distance of the Sun from the Earth. His revolution is accomplished in about 29 $\frac{1}{2}$ years. The rotation on his axis is, like that of Jupiter, very rapid, being performed in 10 hours 29 $\frac{1}{4}$ minutes. His diameter is nearly 10 times, and his magnitude 995 times, that of the Earth. Alone of all the planets he is surrounded by a triple ring, very thin and broad.

16. *Uranus*, discovered by Sir W. Herschel in 1781, is 1800 millions of miles in mean distance from the Sun, or 19 times that of the Sun from the Earth. The period of

17. *Neptune*. The planet above mentioned was regarded as the most remote body in the solar system till 1846, when one of the noblest triumphs of astronomical science was achieved by the discovery of *Neptune*, from an investigation of the perturbations which it produces in the motions of Uranus. This great result was accomplished by Mr. Adams in England, and M. Leverrier in France, independently of each other. The actual existence of the planet was established by Dr. Galle, of the Berlin Observatory, who first perceived it on the night of the 23rd of September, 1846. Its diameter is 42,000 miles, and its period of revolution $164\frac{1}{2}$ years.

SATELLITES OR MOONS.

19. The *Secondary Planets* are bodies which revolve about their respective primaries, as the Primary Planets revolve about the Sun. Of these, one attends on our Earth, four on Jupiter, eight on Saturn, six on Uranus, and one at least on Neptune. They are all opaque bodies, and serve to reflect the light of the Sun upon their respective primaries.

20. The *Moon*, in revolving about the Earth, exhibits a variety of appearances, called her *phases*. These will be hereafter explained.

21. The distance of the Moon from the Earth is about 238 thousand miles; and the time from one New Moon to another is somewhat more than $29\frac{1}{2}$ days. Her diameter is 2160 miles, and her magnitude $\frac{1}{49}$ th of that of the Earth. The Moon has no atmosphere; consequently there is no water on her surface, and no animals or plants, constituted like those on the Earth, could live there. Volcanoes and mountains are seen on her surface when viewed through powerful telescopes.

22. The Moon, at her opposition, sometimes passes through the Earth's shadow; in which case she is partially or totally obscured, and is said to undergo an *eclipse*. (See Art. on Eclipses.)

23. The Satellites of Jupiter, Saturn, and Uranus,

of Jupiter's Satellites, it has been ascertained that light requires 8 minutes and 13 seconds to come from the Sun to the Earth.* These four Satellites may be seen at any time with ordinary telescopes; those of Saturn, and particularly those of Uranus, can only be seen with the aid of telescopes of the most powerful kind.

COMETS.

24. *Comets* form the most numerous class of bodies which belong to our system, and sometimes exhibit appearances which render them the most imposing of all natural phenomena. Like the planets, they revolve about the Sun, but differ in many important particulars from those bodies. The head of a comet consists of an ill-defined nebulous mass of luminous matter, brightest in the centre; and although they doubtless shine by reflecting the solar light, yet, as even the largest that have been observed have failed to exhibit any phases, it seems probable that they consist only of vapour penetrable by the rays of the Sun, and reflect those rays from their interior parts, as well as from their external surface. From the head of the comet a stream of light, sometimes separated into two parts, appears to diverge in a direction opposite to that of the Sun. This magnificent appendage is called the train, or tail; it grows broader as its distance from the head of the comet increases, and is sometimes of a prodigious length, extending, in some recorded instances, to 45° , 70° , and even 90° . Some comets are furnished with several tails or diverging streams of light; while others, particularly small telescopic ones, are frequently found entirely destitute of that appendage. The tail of a comet is always transparent, the smallest stars being visible through it. The number of the comets is unknown; several hundreds having been observed since the discovery of the telescope, and these form, probably, a very small proportion of the whole. Scarcely any two of them have been found to pursue nearly the same tract. Their magnitudes are also extremely various: nor is there a greater

regularity observed with respect to their motions, some of them moving in the same direction as the planets, some of them in an opposite direction, and some at right angles to the orbits of the planets. Notwithstanding the great number of the comets, there are only very few which are certainly known to revolve periodically round the sun. The most famous of these are, 1st, Halley's comet, which performs its revolution in 76 years; 2d, Encke's, which revolves in about 3 years and 4 months; 3d, Biela's, the revolution of which is completed in 6 years and 9 months; 4th, Faye's, which revolves in $7\frac{1}{4}$ years; 5th, Brorsen's, in rather less than 6 years; 6th, De Vico's, in $5\frac{3}{4}$ years, and D'Arrest's comet in $6\frac{1}{2}$ years.

THE SIDEREAL SYSTEM.

25. Besides the bodies which have been already described, the boundless regions of space beyond the solar system present to our view myriads of splendid self-luminous objects, which, though probably of the same nature as our Sun, and many of them possibly far exceeding the Sun in magnitude, appear, by reason of their immense distances from us, only as so many brilliant points.

26. The *Fixed Stars* are arranged by astronomers, with reference to their apparent magnitudes, into several classes or orders, the brightest and largest being called stars of the first magnitude; the next to these in lustre, stars of the second magnitude; and so on to the sixth, which are the smallest visible to the naked eye. Stars which cannot be discerned without the aid of a telescope are comprehended under the general denomination of *Telescopic Stars*.

27. The stars are not equally scattered over the heavens, but disposed in groups, or *Constellations*, to which, from the remotest antiquity, names have been given from certain figures of men or animals to which they were conceived to have some resemblance. These fanciful appellations are still retained on our celestial

28. The whole number of stars visible to the naked eye is probably about 3000; of these, however, seldom more than a thousand can be seen by unassisted vision at any one time above the horizon. By the aid of the telescope their number is prodigiously increased. In a portion of the Milky Way, which is nothing but an assemblage of multitudes of small stars, Sir W. Herschel observed the surprising number of 50,000 pass through the field of his telescope in one hour.

29. Every attempt to determine the actual distance of the stars has hitherto failed. All that astronomers have been able to ascertain with certainty upon the subject is, that the distance of Sirius (supposed to be the nearest fixed star) cannot be so small as 19 millions of millions of miles: how much greater it may be is unknown.

30. Some of the stars are found to undergo a periodical variation of lustre, amounting in one or two instances to a complete extinction and revival; others have appeared for a while, and then died away altogether. Many stars are found to be double or triple; and of these, some exhibit the beautiful phenomena of contrasted or complementary colours, &c.; for example, if one of the stars is red, the other is generally green.

31. Though the fixed stars have no sensible motion relatively to each other, yet the places of many of them, when determined at considerable intervals of time by very accurate astronomical instruments, are found to undergo small changes. Some stars which are mentioned by ancient astronomers have now ceased to be visible.

32. For full and accurate information on this subject see Sir John Herschel's "Treatise on Astronomy," in the *Cabinet Cyclopædia*; also Herschel's "Outlines of Astronomy."

MOTIONS OF THE PLANETS. •

33. All the planets move round the sun *from west to east*, and in the same direction do the moons revolve round their primaries, with the exception of those of Herschel, which appear to revolve in a contrary direction. The paths in which the planets move round the sun, and in which the moons move round their primaries, are called their *orbits*. These orbits are not exactly circular, as they are commonly represented on paper, but are elliptical or oval, so that all the planets are nearer the sun when in one part of their orbits than in another.

34. In addition to their annual revolutions, some of the planets are known to have *diurnal*, or daily revolutions, like our earth. The periods of these *daily revolutions* have been ascertained, in several of the planets, by spots on their surfaces. But where no such mark is discernible it cannot be ascertained whether the planet has a daily revolution or not, though this has been found to be the case in every instance where spots are seen, and, therefore, there is little doubt but all have a daily, as well as a yearly motion. The *axis* of a planet is an imaginary line passing through its centre, and about which its diurnal revolution is performed. The *poles* of the planets are the extremities of this axis.

35. The orbits of Mercury and Venus are within that of the earth, and consequently they are called *inferior* planets. The orbits of all the other planets are without, or exterior to that of the earth, and these are called *superior* planets. Since the orbits of the planets are elliptical, these bodies are consequently sometimes nearer the sun than at others. An ellipse, or oval, has two foci, and the sun, instead of being in the common centre, is always in one of the foci of their orbits. The orbit of a planet is represented by the figure on next page, where A, D, B, E, is an ellipse, with its two foci, s and o, the sun being in the focus s. When the Earth is at the point A, it is at its

around the sun, is in that part of its orbit nearest the sun, as at A, it is said to be in its *perihelion*; and when in that part which is at the greatest distance from the sun, as at B, it is said to be in its *aphelion*. The line, S D, is the mean, or average distance of a planet's orbit from the sun.

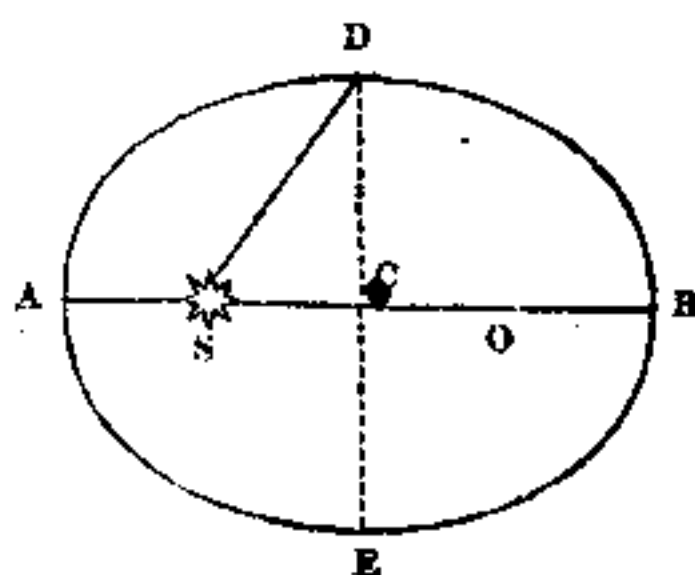


Fig. 1.

36. *Ecliptic*.—(See diagram of Armillary sphere.) The *planes* of the orbits of all the planets pass through the centre of the sun. The plane of an orbit is an imaginary surface, passing from one extremity, or side, of the orbit to the other. If the rim of a drum-head be considered the orbit, its plane would be the parchment extended across it, on which the drum is beaten. Let us suppose the earth's orbit to be such a plane, cutting the sun through his centre, and extending out on every side to the heavens; the great circle so made would mark the line of the *ecliptic*, or the sun's apparent path through the heavens. This circle is called the sun's *apparent* path, because the revolution of the earth gives the sun the appearance of passing through it. It is called the *ecliptic*, because eclipses happen when the moon is in, or near, this apparent path.

37. *Zodiac*.—The zodiac is an imaginary belt, or broad circle, extending quite around the heavens. The ecliptic divides the zodiac into two equal parts, the zodiac extending 8 degrees on each side of the ecliptic, and being therefore 16 degrees wide. The zodiac is divided into 12 equal parts called the *signs of the zodiac*.

38. The sun appears every year to pass around the great circle of the ecliptic, and consequently, through the 12 constellations, or signs of the zodiac. But the sun, in respect to the earth, stands still, and his apparent yearly course through the heavens is caused by the annual revolution of the earth around its orbit. To understand the

cause of this deception, let us suppose that *s* (Fig. 2.) is the sun, *A B* a part of the circle of the ecliptic, and *c D*, a part of the earth's orbit. Now, if a spectator be placed at *c*, he will see the sun in that part of the ecliptic marked by *B*, but when the earth moves in her annual revolution to *D*, the spectator will see the sun in that part of the heavens marked by *A*; so that the motion of the earth in one direction will give the sun an apparent motion in the contrary direction.

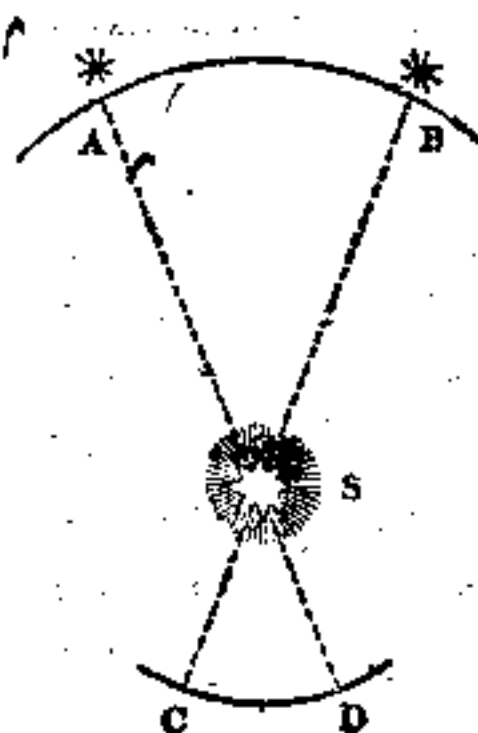


Fig. 2.

39. A sign, or *constellation*, is a collection of fixed stars, and, as we have already seen, the sun appears to move through the 12 signs of the zodiac every year. Now, the sun's place in the heavens, or zodiac, is found by his apparent conjunction, or nearness to any particular star in the constellation. Suppose a spectator at *c* observes the sun to be nearly in a line with the star at *B*, then the sun would be near a particular star in a certain constellation. When the earth moves to *D*, the sun's place would assume another direction, and he would seem to have moved into another constellation, and near the star *A*.

40. Each of the 12 signs of the zodiac is divided into 30 smaller parts, called *degrees*; each degree into 60 equal parts, called *minutes*, and each minute into 60 parts, called *seconds*.

41. The division of the zodiac into *signs* is of very ancient date, each sign having also received the name of some animal, or object, which the constellation, forming that sign, was supposed to resemble. It is hardly necessary to say, that this is chiefly the result of imagination, since the figures made by the places of the stars never mark the outlines of the figures of animals, or other objects. This is, however, found to be the most convenient method of finding any particular star at this day,

for among astronomers, any star, in each constellation, may be designated by describing the part of the animal in which it is situated. Thus, by knowing how many stars belong to the constellation Leo, or the Lion, we readily know what star is meant by that which is situated on the Lion's ear or tail.

42. The signs of the zodiac have each a special *name* and *symbol*, and are arranged in a certain order, reckoning from west to east, called the *order of the signs*. These are, ♈ Aries. ♉ Taurus. ♊ Gemini. ♋ Cancer. ♌ Leo. ♍ Virgo. ♎ Libra. ♏ Scorpio. ♐ Sagittarius. ♑ Capricornus. ♒ Aquarius. ♓ Pisces. It has been decided by the Egyptian Institute that these names are derived from comparisons made by the Egyptians between celestial and terrestrial phenomena, being principally of a local nature, and belonging exclusively to a part of their own country. Thus:—

(1.) *Capricornus*.—The first month of summer, extending from June 20 to July 20. He begins the year and leads the celestial animals, as the goat is the leader of the flock.

(2.) *Aquarius*.—The second month of summer, when the inundation of the Nile is at its full extent.

(3.) *Pisces*. The third month of summer, when the rise of the waters causes the fish to move about.

(4.) *Aries*. The first month of autumn, extending from September 20 to October 20. As the waters subside, the ram returns to the pastures, leading the flocks which have been held captive by the inundation.

(5.) *Taurus*. The second month of autumn, denoting the period of tillage in Egypt.

(6.) *Gemini*. The third month of autumn, when the seeds germinate. The sign is that of two youths of different sexes.

(7.) *Cancer*. The first month of winter, extending from December 20 to January 20. The motion of the crab indicates the retrograde motion of the sun at the winter solstice.

(8.) *Leo*. The second month of winter. The king of

animals typifies the strength and grandeur of nature at this period.

(9.) *Virgo*. The third month of winter. The sign denotes beauty and fruitfulness.

(10.) *Libra*. The first month of spring, extending from March 20 to April 20. Allusion is made to the vernal equinox, when the days and nights are equal.

(11.) *Scorpio*. The second month of spring, when the heat stimulates venomous reptiles, and induces disease and pestilence.

(12.) *Sagittarius*. The last month of spring. The centaur drives all before him; its course is drawing to a close. — *Arago*.

The twelve signs of the zodiac, together with the sun, and the earth revolving around him, are represented in the plate of astronomical diagrams.

43. It is a well known law in physical science, that all ~~undisturbed motion is straight forward~~, and that a body projected into open space would continue perpetually to move in a right line, unless retarded or drawn out of this course by some external cause. To account for the motions of the planets in their orbits, we will suppose that the earth, at the time of its creation, was thrown by the hand of the Creator into open space, the sun having been before created and fixed in his present place.

44. By the term *compound motion*, it is meant, that when a body is acted on by two forces perpendicular to each other, its motion will be in a diagonal line between the direction of the two forces. But we will again here suppose that a ball be moving in the line xx , (Fig. 3,) with a given force, and that another force half as great should strike it in the direction of N , the ball would then describe the diagonal of a parallelogram, whose length would be just equal to twice its breadth,

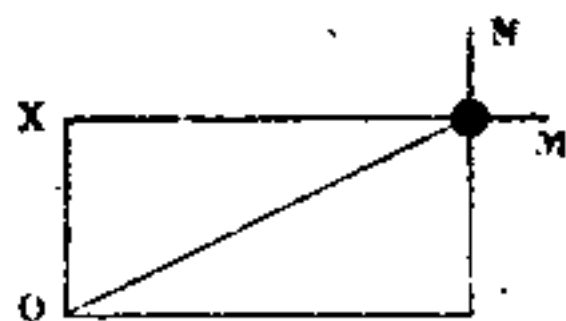


Fig. 3.

would obey the impulse and direction of these two forces only.

45. Now let A, (Fig. 4,) represent the earth, and s the sun; and suppose the earth to be moving forward, in the

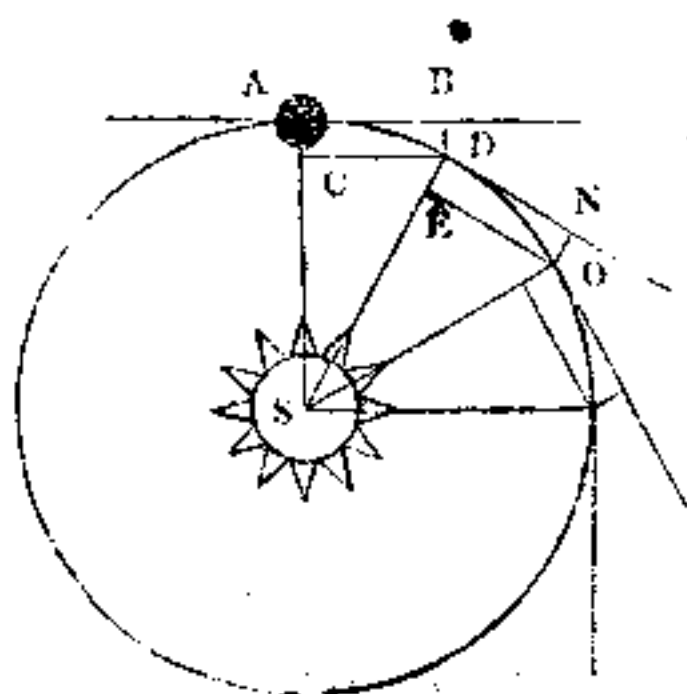


Fig. 4.

line from A to B, and to have arrived at A, with a velocity sufficient, in a given time, and without disturbance, to carry it to B. But at the point A, the sun s, acts upon the earth with his attractive power, and with a force which would draw it to C, in the same time that it

have gone to B.

instead of passing to B, in a straight line, would be drawn down to D, the diagonal of the parallelogram A, B, C, D. The line of direction in Fig. 3. is straight, because the body moved obeys only the direction of the two forces; but it is curved from A to D (Fig. 4.); in consequence of the continued force of the sun's attraction, which produces a constant deviation from a right line. When the earth arrives at D, still retaining its projectile or centrifugal force, its line of direction would be towards N, but while it would pass along to N without disturbance, the attracting force of the sun is again sufficient to bring it to E, in a straight line, so that, in obedience to the two impulses, it again describes the curve to O.

46. It must be remembered, in order to account for the circular motions of the planets, that the attractive force of the sun is not exerted at once, or by a single impulse, as is the case with the cross forces, producing a straight line, but that this force is imparted by degrees, and is constant. It therefore acts equally on the earth, in all parts of the course from A to D, and from D to O. From O, the earth, having the same impulses as before,

moves in the same curved or circular direction, and thus its motion is continued perpetually.

47. The tendency of the earth to move forward in a straight line is called the *centrifugal force*, and the attraction of the sun, by which it is drawn downwards, or towards a centre, is called its *centripetal force*, and it is by these two forces that the planets are made to perform their constant revolutions around the sun.

48. In the above explanation, it has been supposed that the sun's attraction, was at all times equal, or that the earth was at an equal distance from the sun in all parts of its orbit. But, as heretofore explained, the orbits of all the planets are *elliptical*, the sun being placed in the lower focus of the ellipse. The sun's attraction is, therefore, stronger in some parts of their orbits than in others, and for this reason their velocities are greater at some periods of their ~~revolutions~~ *orbits* than at others.

49. To render this intelligible, suppose, as before, that the centrifugal and centripetal forces so balance each other, that the earth moves round the circular orbit AEB, (Fig. 5,) until it comes to the point E; and at this point, let us suppose that the gravitating force is too strong for the force of projection, so that the earth, instead of continuing its former direction towards B, is attracted by the sun S, in the curve EC. When at C, the line of the earth's projectile force, instead of tending to carry it farther from the sun, as would be the case were it revolving in a circular orbit, now tends to draw it still nearer to him, so that at this point it is impelled by both forces towards the sun. From C, therefore, the sun's attraction is increasing in proportion as the square of the distance be-

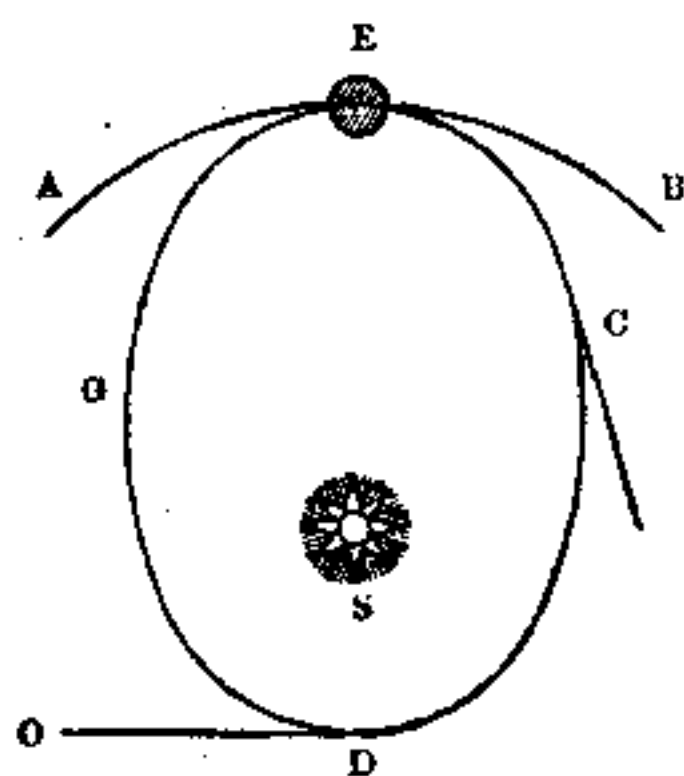


Fig. 5.

earth will be uniformly accelerated, until it arrives at the point nearest the sun, D. At this part of its orbit, the earth will have gained, by its increased velocity, so much centrifugal force, as to give it a tendency to overcome the sun's attraction, and to fly off in the line D O. But the sun's attraction being also increased by the near approach of the earth, the earth is retained in its orbit, notwithstanding its increased centrifugal force, and it therefore passes through the opposite part of its orbit, from D to G, at the same distance from him that it approached. As the earth passes from the sun, the sun's attraction tends continually to retard the motion of the earth as it did to increase it while approaching him. But the velocity the earth had acquired in approaching the sun, gives it the same rate of motion from D to G, that it had from C to D. From G, the earth's motion is uniformly retarded, until it again arrives at E, the point from which it commenced, and from whence it describes the same orbit, by virtue of the same forces, as before. The earth, therefore, in its journey round the sun, moves at very unequal velocities, sometimes being retarded, and then again accelerated, by the sun's attraction.

50. It is an interesting circumstance, respecting the motions of the planets, that if the contents of their orbits be divided unto unequal triangles, the acute angles of

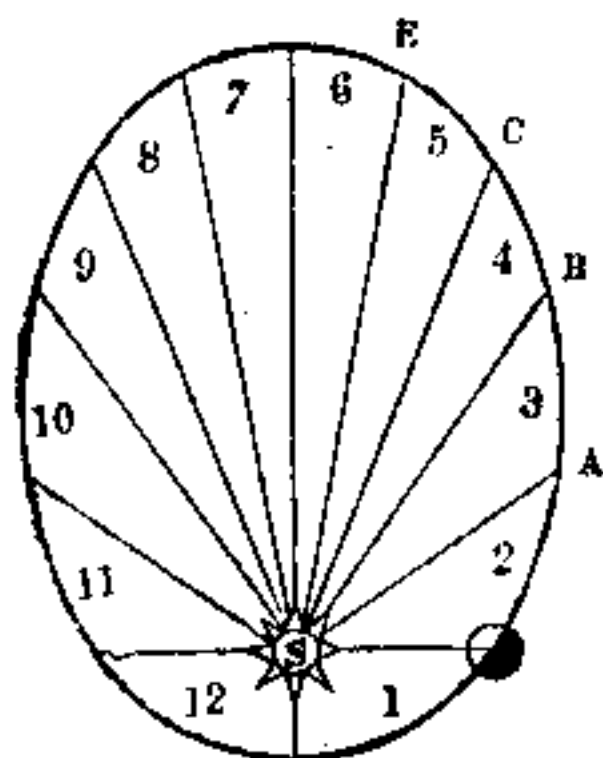


Fig. 6.

which centre at the sun, with the line of the orbit for their bases, the centre of the planet will pass through each of these bases in equal times. This will be understood from Fig. 6., the elliptic being supposed to be the earth's orbit, with the sun, S, in one of the foci. Now the spaces 1, 2, 3, &c., though of different shapes, are of the same dimensions, or contain an equal area. The earth we have already seen,

in its journey round the sun, describes an ellipse, and moves more rapidly in one part of its orbit than in another. But whatever may be its actual velocity, its comparative motion is through equal areas in equal times. Thus its centre passes from E to C, and from C to B, in the same period of time, and so of all the other divisions marked in the figure. If the figure, therefore, be considered the plane of the earth's orbit, divided into 12 equal areas, answering to the 12 months of the year, the earth will pass through the same areas in every month, but the spaces through which it passes will be increased, during every month, for one half the year, and diminished, during every month, for the other half.

51. The reason why the planets, when they approach near the sun, do not fall to him, in consequence of his increased attraction, and why they do not fly off into open space, when they recede to the greatest distance from him, may be thus explained.

52. Taking the earth as an example, we have shown that when in the part of her orbit nearest the sun, her velocity is greatly increased by his attraction, and that consequently the earth's centrifugal force is increased in proportion. As an illustration of this, we know that a thread which will sustain an ounce ball, when whirled round in the air, at the rate of 50 revolutions in a minute, would be broken were these revolutions increased to the number of 60 or 70 in a minute, and that the ball would then fly off in a straight line. This shows that when the motion of a revolving body is increased, its centrifugal force is also increased. Now, the velocity of the earth increases in an inverse proportion, as its distance from the sun diminishes, and in proportion to the increase of velocity is its centrifugal force increased; so that, in any other part of its orbit, except when nearest the sun, this increase of velocity would carry the earth away from its centre of attraction. But this increase of the earth's velocity is caused by its near approach to the sun, and consequently the sun's attraction is increased, as well as

force is increased, the centripetal force is increased, in proportion, and thus, while the centrifugal force prevents the earth from falling to the sun, the centripetal force prevents it from moving off in a straight line.

53. When the earth is in that part of its orbit most distant from the sun, its projectile velocity being retarded by the counter force of the sun's attraction, becomes greatly diminished, and then the centripetal force becomes stronger than the centrifugal, and the earth is again brought back by the sun's attraction, as before, and in this manner its motion goes on without ceasing. It is supposed, as the planets move through spaces void of resistance, that their centrifugal forces remain the same as when they first emanated from the hand of the Creator, and that this force, without the influence of the sun's attraction, would carry them forward into infinite space.

KEPLER'S LAWS.

54. The laws of elliptic motion about the sun as a focus, and of the equable description of areas by lines joining the sun and planets, were originally established by Kepler, from a consideration of the observed motion of Mars; and were by him extended, analogically, to all, the other planets. These laws are three:—

1. *That every planet moves so that the line drawn from it to the sun describes about the sun areas proportional to the times.*
2. *That the planets all move in elliptic orbits, of which the sun occupies one of the foci.*
3. *That the squares of the times of the revolutions of the planets are as the cubes of their mean distances from the sun.*

The announcement of these laws by Kepler led to a further inquiry into the causes which governed these movements. 1. From the first law, Newton concluded that the force acting on the planets is directed towards the centre of the sun. 2. From the second law, he

determined *that the force acting on the planets is in the inverse ratio of the square of the distance of their centres from that of the sun.* 3. From the third law, he found *that the force is proportionate to the mass.*

MOTION OF THE EARTH.

55. The motion of the earth round the sun is at the rate of 68,000 miles in an hour, while its motion on its own axis, at the equator, is at the rate of about 1042 miles in the hour. The equator, being that part of the earth most distant from its axis, the motion there is more rapid than towards the poles, in proportion to its greater distance from the axis of motion.

56. The method of ascertaining the velocity of the earth's motion, both in its orbit and round its axis, is simple, and easily understood; for by knowing the diameter of the earth's orbit, its circumference is readily found, and as we know how long it takes the earth to perform her yearly circuit, we have only to calculate what part of her journey she goes through in an hour. By the same principle, the hourly rotation of the earth is as readily ascertained.

57. We are insensible to these motions, because not only the earth, but the atmosphere, and all terrestrial things, partake of the same motion, and there is no change in the relation of objects in consequence of it. If we look out at the window of a railway-carriage when it is in motion, the carriage will seem to stand still, while the hills, fields, and trees appear to pass rapidly by us. This deception arises from our not having any object with which to compare this motion, when shut up in the carriage, for then every object around us keeps the same relative position. And so, in respect to the motion of the earth, having nothing with which to compare its movement, except the heavenly bodies, when the earth moves in one direction, these objects appear to move in the contrary direction.

memory the names and directions of the lines, or circles, by which the earth is divided into parts. See the beginning of this work, also the diagram of the projection of the sphere. These lines, it must be understood, are entirely imaginary, there being no such divisions marked by nature on the earth's surface. They are, however, so necessary that no accurate description of the earth, or of its position with respect to the heavenly bodies, can be conveyed without them.

59. The revolution of the earth about its axis produces day and night, and the seasons result from its revolution round the sun. Before we proceed to describe these phenomena, it is necessary to consider,

THE INCLINATION OF THE EARTH'S AXIS.

60. The inclination of the earth's axis to the plane of its orbit never varies, but always makes an angle with it of $23\frac{1}{2}^{\circ}$, as it moves round the sun. The axis of the earth is therefore always parallel with itself: that is, if a line be drawn through the centre of the earth, in the direction of its axis, and extended north and south, beyond the earth's diameter, the line so produced will always be parallel to the same line, or any number of lines, so drawn, when the earth is in different parts of its orbit.

61. Suppose a rod to be fixed into the flat surface of a table, and so inclined as to make an angle with a perpendicular from the table of $23\frac{1}{2}^{\circ}$. Let this rod represent the axis of the earth, and the surface of the table, the ecliptic. Now place on the table a lamp, and round the lamp hold a wire circle three or four feet in diameter, so that it shall be parallel with the plane of the table, and as high above it as the flame of the lamp. Having prepared a small terrestrial globe, by passing a wire through it for an axis, and letting it project a few inches each way, for the poles, take hold of the north pole, and carry it round the circle, with the poles constantly parallel to the ecliptic plane, the table. The rod being inclined $23\frac{1}{2}^{\circ}$

in the same degree, and thus the axis of the earth will be inclined to that of the ecliptic everywhere in the same degree, and lines drawn in the direction of the earth's axis will be parallel to each other in any part of its orbit.

62. This will be understood by the diagram of the seasons, where it will be seen, that the poles of the earth, in the several positions being equally inclined, are parallel to each other. Supposing the lamp to represent the sun, and the wire circle the earth's orbit, the actual position of the earth, during its annual revolution round the sun, will be comprehended; and if the globe be turned on its axis, while passing round the lamp, the diurnal or daily revolution of the earth will also be represented.

DAY AND NIGHT.

63. Were the direction of the earth's axis perpendicular to the plane of its orbit, the days and nights would be of equal length all the year, for then just one half of the earth, from pole to pole, would be enlightened, and at the same time the other half would be in darkness. Suppose the line *s o* (Fig. 7.), from the sun to the earth, to be



Fig. 7.

the plane of the earth's orbit, and that *N S* is the axis of the earth perpendicular to it, then it is obvious, that exactly the same points on the earth would constantly pass through the alternate vicissitudes of day and night; for all who live on the meridian line between *N* and *S*, which line crosses the equator at *O*, would see the sun at the same time, and consequently, as the earth revolves, would

in all parts of the globe, the days and nights would be of equal length, at any given place.

64. Now it is the inclination of the earth's axis, as above described, which causes the lengths of the days and nights to differ at the same place at different seasons of the year; for, on reviewing the position of the globe at the summer solstice, as shown in the second diagram in the plate of the projection of the sphere, it will be observed, that the line formed by the enlightened and dark hemispheres does not coincide with the line of the axis and poles, as in Fig. 7, but that the line formed by the darkness and the light extends obliquely across the line of the earth's axis, so that the north pole is in the light, while the south is in the dark. In this position, therefore, an observer at the north pole would see the sun constantly, while another at the south pole would not see it at all. Hence those living in the north temperate zone, at the season of the year when the earth is at the summer solstice, would have long days and short nights; while those who live in the south temperate zone, at the same time, and when it would be winter there, would have long nights and short days in the same proportion.

SEASONS OF THE YEAR.

65. The vicissitudes of the seasons are caused by the annual revolution of the earth round the sun, together with the inclination of its axis to the plane of its orbit. It has already been explained, that the ecliptic is the plane of the earth's orbit, and is supposed to be placed on a level with the earth's horizon, and hence, that this plane is considered the standard, by which the inclination of the lines crossing the earth, and the obliquity of the orbits of the other planets, are to be estimated.

66. The equinoctial line, or the great circle passing round the middle of the earth, is inclined to the ecliptic, as well as the line of the earth's axis, and hence, in passing round the sun, the equinoctial line intersects or crosses

pose A B (Fig. 8.), to be the ecliptic, E F, the equator, and C D, the earth's axis. The ecliptic and equator are supposed to be seen edgewise, so as to appear like lines instead of circles. Now it will be understood from the figure that the inclination of the equator to the ecliptic, (or the sun's apparent annual path through the heavens,) will cause those lines, namely, the line of the equator and the line of the ecliptic, to cut, or cross each other, as the sun makes his apparent annual revolution, and that this intersection will happen twice in the year, when the earth is in the two opposite points of her orbit.

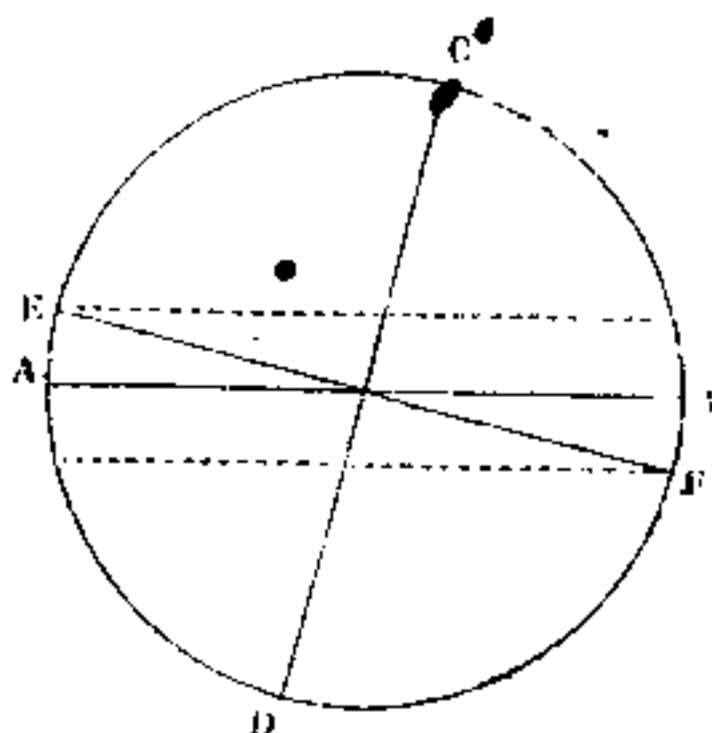


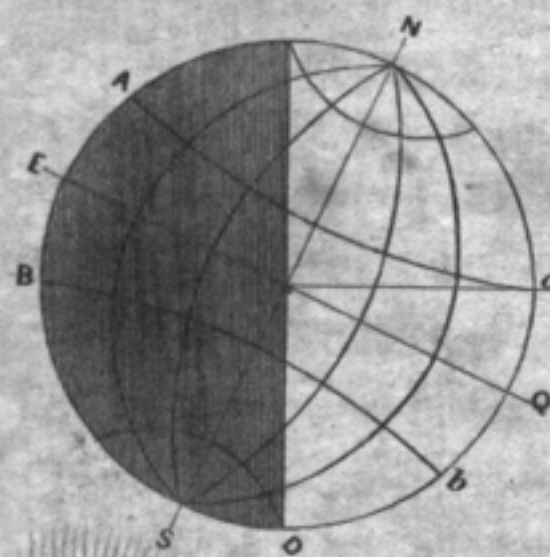
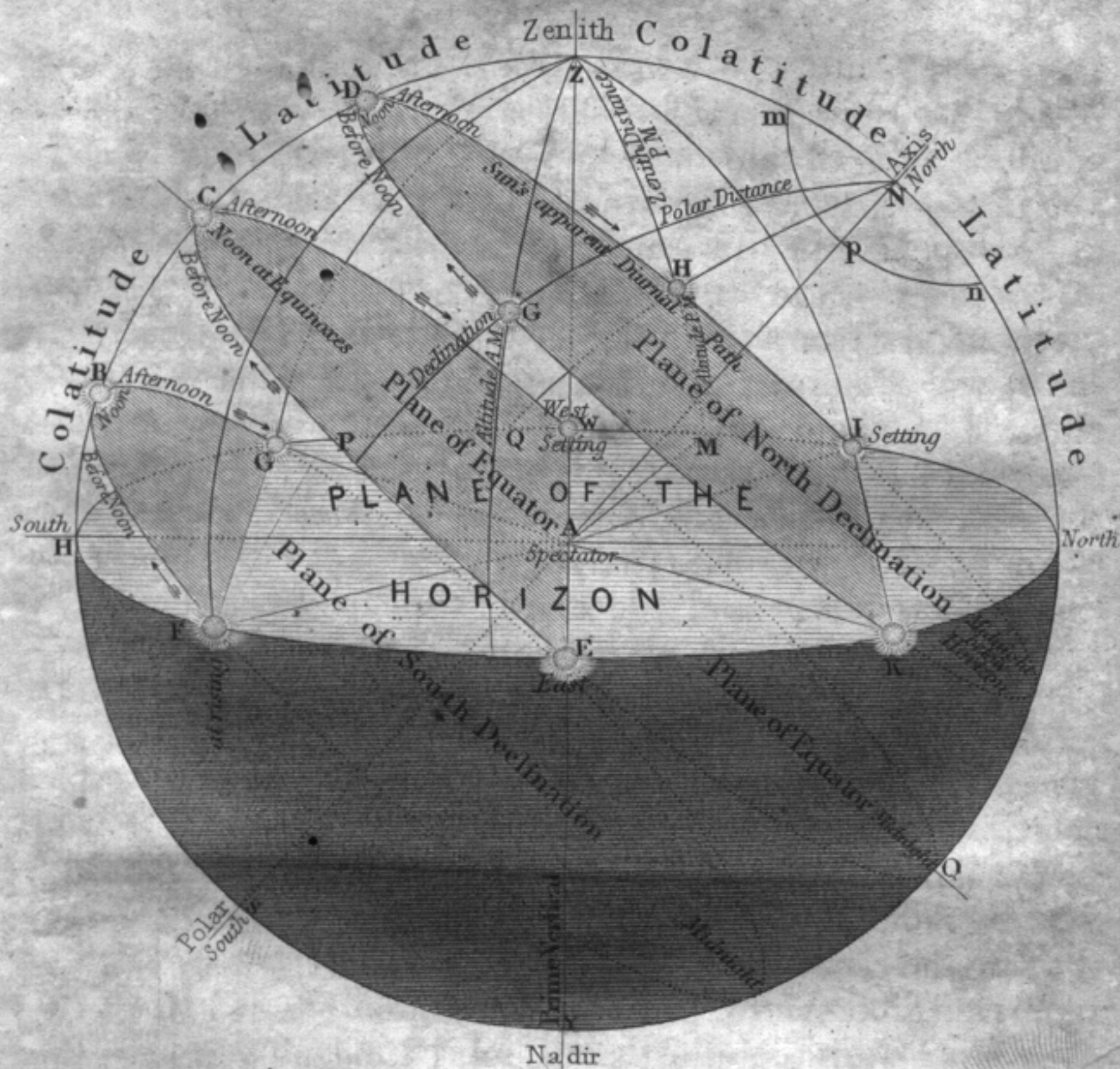
Fig. 8.

67. These periods are on the 21st of March and the 21st of September, in each year, and the points at which the sun is seen at these times are called the *equinoctial* points. That which happens in September is called the *autumnal* equinox, and that which happens in March, the *vernal* equinox. At these seasons, the sun rises at 6 o'clock and sets at 6 o'clock, and the days and nights are equal in length in every part of the globe.

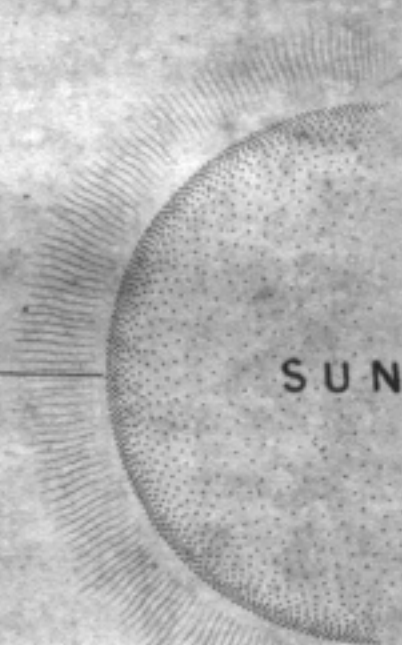
68. The solstices are the points where the ecliptic and the equator are at the greatest distance from each other. The earth, in its yearly revolution, passes through each of these points. One is called the *summer*, and the other the *winter* solstice. (See plate.) The sun is said to enter the summer solstice on the 21st of June; and at this time, in our hemisphere, the days are longest and the nights shortest. On the 21st of December he enters his winter solstice, when the length of the days and nights are reversed from what they were in June, the days being shortest and the nights longest.

69. Having learned these explanations, the student will be able to understand in what order the seasons

(ON THE PLANE OF A MERIDIAN)



SUMMER SOLSTICE

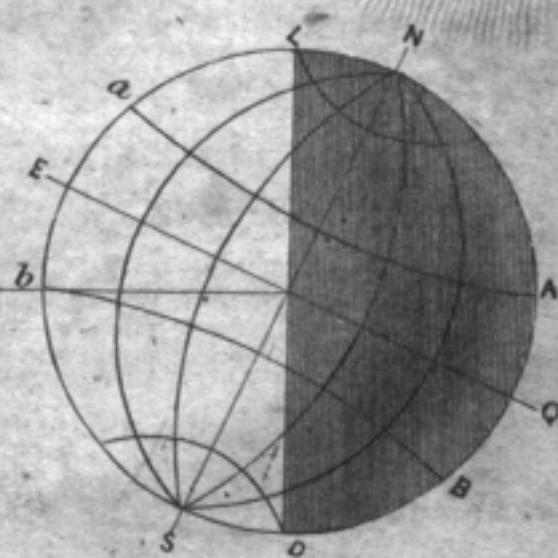


SUN



SUN

WINTER SOLSTICE



succeed each other, and the reason why such changes are the effect of the earth's revolution.

70. Suppose the earth, as shown in the diagram of the seasons on the plate, to be in her summer solstice, which takes place on the 21st of June. At this period she will have her north pole, N, so inclined towards the sun, that the whole arctic circle will be illuminated, and consequently the sun's rays will extend $23\frac{1}{2}$ degrees, the breadth of the polar circles, beyond the north pole. The diurnal revolution, therefore, when the earth is in this position causes no succession of day and night at the pole, since the whole frigid zone is within the reach of his rays. The people who live within the arctic circle will, consequently, at this time, enjoy perpetual day. During this period, just the same proportion of the earth that is enlightened in the northern hemisphere, will be in total darkness in the opposite region of the southern hemisphere; so that while the people of the north enjoy perpetual day, those of the south are enveloped in perpetual night. Those who live near the arctic circle in the north temperate zone, will, during the summer, come, for a few hours, within the regions of night, by the earth's diurnal revolution; and the greater the distance from the circle, the longer will be their nights, and the shorter their days. Hence, at this season, the days will be longer than the nights everywhere between the equator and the arctic circle. At the equator, the days and nights will be equal, and between the equator and the south polar circle the nights will be longer than the days, in the same proportion as the days are longer than the nights, from the equator to the arctic circle.

71. As the earth moves round the sun, the line which divides the darkness and the light gradually approaches the poles, till having performed one quarter of her yearly journey from the point where she is in June, she comes to that in which she is shown about the 21st of September. At this time, the boundary of light and darkness passes through the equator, dividing the earth into two equal parts.

nights are of equal length, the sun being 12 hours alternately above and below the horizon. In this position of the earth, the sun is said to be in the *autumnal equinox*.

72. In the progress of the earth in her orbit, the light of the sun gradually reaches a little more of the antarctic circle. The days, therefore, in the northern hemisphere, grow shorter at every diurnal revolution, until the 21st of December, when the whole arctic circle is involved in total darkness. And now, the same places which enjoyed constant day in the June before, are involved in perpetual night. At this time, the sun, to those who live in the northern hemisphere, is said to be in his *winter solstice*; and then the winter nights are just as long as were the summer days, and the winter days as long as the summer nights.

73. When the earth has completed another quarter of her annual journey, and has come to the point of her orbit opposite to where she was on the 21st of September, which happens on the 21st of March, the line dividing the light from the darkness again passes through both poles. In this position of the earth with respect to the sun, the days and nights are again equal all over the world, and the sun is said to be in his *vernal equinox*.

74. From the vernal equinox, as the earth advances, the northern hemisphere enjoys more and more light, while the southern falls into the region of darkness, in proportion, so that the days north of the equator increase in length until the 21st of June, at which time the sun is again longest above the horizon, and the shortest time below it.

75. Thus the *apparent* motion of the sun *from east to west*, is caused by the *real* motion of the earth *from west to east*. If the earth is in any point of its orbit, the sun will always seem in the opposite point in the heavens. When the earth moves one degree to the west, the sun seems to move the same distance to the east; and when the earth has completed one revolution in its orbit, the sun appears to have completed a revolution through the

rent path of the sun through the heavens, is the real path of the earth round the sun.

76. It will be observed by the above explanation of the seasons, and a close inspection of the diagram by which it is illustrated, that the sun constantly shines on a portion of the earth equal to 90 degrees north, and 90 degrees south, from his place in the heavens, and, consequently, that he always enlightens 180 degrees, or one half the earth. If, therefore, the axis of the earth were perpendicular to the plane of its orbit, the days and nights would everywhere be equal, for as the earth performs its diurnal revolutions there would be 12 hours day, and 12 hours night. But since the inclination of its axis is $23\frac{1}{2}$ degrees, the light of the sun is thrown $23\frac{1}{2}$ degrees beyond the north pole; that is, it enlightens the earth $23\frac{1}{2}$ degrees further in that direction, when the north pole is turned towards the sun, than it would, had the earth's axis no inclination. Now, as the sun's light reaches only ninety degrees north or south of his place in the heavens, so when the arctic circle is enlightened, the antarctic circle must be in the dark; for if the light reaches $23\frac{1}{2}$ degrees beyond the north pole, it must fall $23\frac{1}{2}$ degrees short of the south pole.

77. As the earth travels round the sun, in his yearly circuit, this inclination of the poles is alternately *towards* and *from*. During our winter the north polar region is thrown beyond the rays of the sun, while a corresponding portion around the south pole enjoys the sun's light. And thus, at the poles, there are alternately six months of darkness and winter, and six months of sunshine and summer. While we, in the northern hemisphere, are chilled by the cold blasts of winter, the inhabitants of the southern hemisphere are enjoying all the delights of summer; and while we are scorched by the rays of a vertical sun in June and July, our southern friends are shivering with the rigours of mid-winter.

78. At the equator, no such changes take place. The rays of the sun, as the earth passes round him, are vertical twice a year at every place between the tropics.

Hence, at the equator, there are two summers and no winter, and as the sun there constantly shines on the same half of the earth in succession, were it not for the refractive properties of the atmosphere, the days and nights would always be equal, and there would be 12 hours of light, and 12 of darkness.

79. Our northern *Spring* is in March, April, and May; but the *southern* Spring is in September, October, and November.

80. Our *Summer* is in June, July, August, and September; and the *southern* Summer is in December, January, and February.

81. So our *Autumn* is in September, October, and November; and the *southern* Autumn is in March, April, and May.

82. And our *Winter* is in December, January, February; while the *southern* Winter is in June, July, and August.

83. The seasons in the torrid zone are different from the temperate zones.

84. The only distinction within the tropics is from hot and dry, to hot and rainy; and most countries of the torrid zone have six months inclining to wet, and six months inclining to dry air.

85. The frigid zone, has only two seasons, winter and summer; twilight, or perpetual sunshine, for weeks or months.

The long night of winter is very severe, the sun never appearing above the horizon. The most rapid rivers are then frozen from five to six feet deep; the largest lakes and bays are also frozen so as to bear any weight; and rocks are burst by the intensity of the frost.

The brilliancy of the stars, and the Aurora Borealis, make some compensation for the sun's absence. The long twilight, also, which precedes the sun's rising, and lingers after its setting, considerably diminishes the time of total darkness.

The transition, in the frigid zone, from winter's frost to summer's heat, is amazingly rapid. The short summer is very hot, but foggy; and the continual sunshine enables the inhabitants to lay up provisions for the dreary winter.

DIVISIONS OF TIME.

86. *Solar and Sidereal time* — The stars appear to go round the earth in 23 hours, 56 minutes, and 4 seconds, while the sun appears to perform the same revolution in 24 hours, so that the stars gain 3 minutes and 56 seconds upon the sun every day. In a year, this amounts to a day, or to the time taken by the earth to perform one diurnal revolution. It therefore happens, that when time is measured by the stars, there are 366 days in the year, or $366\frac{1}{4}$ diurnal revolutions of the earth; while, if measured by the sun from one meridian to another, there are only 365 whole days in the year. The former are called the *sidereal*, and the latter *solar* days.

87. *Equal, or mean time* is that which is reckoned by a clock, supposed to indicate exactly 24 hours, from 12 o'clock on one day, to 12 o'clock on the next day, *Apparent time* is that which is measured by the apparent motion of the sun in the heavens, as indicated by a meridian line, or sun dial.

THE MOON.

88. One of the most interesting circumstances to us, respecting the moon, is the constant changes which she undergoes, in her passage around the earth. When she first appears, a day or two after her change, we can see only a small portion of her enlightened side, which is in the form of a crescent; and at this time she is commonly called *new moon*. From this period she goes on increasing, or showing more and more of her face every evening, until at last she becomes round, and her face fully illuminated. She then begins again to decrease, by apparently losing a small section of her face, and the next evening another small section from the same part, and so on, decreasing a little every day, until she entirely disappears; and having been absent a day or two, re-appears, in the form of a crescent, or new moon, as before. When the moon disappears, she is said to be in the state of *obscuration*.

she is in the same direction from us with the sun. When she is full, she is said to be in *opposition*, that is, she is in that part of the heavens opposite to the sun, as seen by us.

89. The different appearances of the moon from *new* to *full*, and from *full* to *change*, are owing to her presenting different portions of her enlightened surface towards us at different times. These appearances are called the *phases* of the moon, and are easily accounted for, and understood, by the diagram on the plate. 1. Now when the moon changes, or is in conjunction with the sun, her dark side is turned towards the earth, and she is invisible. The sun always shines on one half of the moon, in every direction, as represented on the outer circle; but we at the earth can see only such portions of the enlightened half as are turned towards us. 2. After her change, when she has moved through a certain portion of her orbit, a small part of her illuminated side comes in sight, and she appears horned, and is then called the *new* moon. 3. Several days afterwards, one half of her disk is visible, her appearance being the same in both circles. At this point she is said to be in her *first quarter*, because she has passed through a quarter of her orbit, and is 90 degrees from the place of her conjunction with the sun. 4. She then shows us still more of her enlightened side, and is then said to appear *gibbous*. 5. As she proceeds in her orbit she comes into a position in which her whole enlightened side is turned towards the earth, and she appears in all the splendour of a *full* moon. During the other half of her revolution, she daily shows less and less of her illuminated side, until she again becomes invisible by her conjunction with the sun. Thus, in passing from her conjunction to her full the moon appears every day to increase, while in going from her full to her conjunction again, she appears to us constantly to decrease, but as seen from the sun, she appears always full.

ECLIPSES.

90. *Lunar Eclipses.* — When the moon falls into the shadow of the earth, the rays of the sun are intercepted, or hid from her, and she then becomes eclipsed. When the earth's shadow covers only a part of her face, as seen by us, she suffers only a *partial* eclipse, one part of her disk being obscured, while the other part reflects the sun's light. But when her whole surface is obscured by the earth's shadow, she then suffers a total eclipse, and of a duration proportionate to the distance she passes through the earth's shadow. On the plate is represented a total lunar eclipse; the moon being in the midst of the earth's shadow. Now it will be apparent that in the situation of the sun, earth, and moon, as represented in the figure, this eclipse will be visible from all parts of that hemisphere of the earth which is next the moon, and that the moon's disk will be equally obscured, from whatever point it is seen. When the moon passes through only a part of the earth's shadow, then she suffers only a partial eclipse, but this is also visible from the whole hemisphere next the moon. It will be remembered that lunar eclipses happen only at full moon, the sun and moon being in opposition, and the earth between them.

91. *Solar Eclipses.* — When the moon passes between the earth and sun, there happens an eclipse of the sun, because then the moon's shadow falls upon the earth. A total eclipse of the sun happens often, but when it occurs, the total obscurity is confined to a small part of the earth; since the dark portion of the moon's shadow never exceeds 200 miles in diameter on the earth. But the moon's partial shadow, or *penumbra*, may cover a space on the earth of more than 4000 miles in diameter, within all which space the sun will be more or less eclipsed. When the penumbra first touches the earth, the eclipse begins at that place, and ends when the penumbra leaves

figure in the plate represents an eclipse of the sun, without regard to the penumbra, that it may be observed how small a part of the earth the dark shadow of the moon covers. To those who live within the limits of this shadow, the eclipse will be total, while to those who live in any direction around it, and within reach of the penumbra, it will be only partial.

92. Solar eclipses are called *annular*, from *annulus*, a ring, when the moon passes across the centre of the sun, hiding all his light, with the exception of a ring on his outer edge, which the moon is too small to cover from the position in which it is seen. The penumbra, as already stated, may cover more than 4000 miles of space, while the umbra never covers more than 200 miles in diameter; hence partial eclipses of the sun may be seen by a vast number of inhabitants, while comparatively few will witness the total eclipse.

93. When there happens a total solar eclipse to us we are eclipsed to the moon, and when the moon is eclipsed to us, an eclipse of the sun happens to the moon. To the moon, an eclipse of the earth can never be total, since her shadow covers only a small portion of the earth's surface. Such an eclipse, therefore, at the moon, appears only as a dark spot on the face of the earth; but when the moon is eclipsed to us, the sun is partially eclipsed to the moon for several hours longer than the moon is eclipsed to us.

THE TIDES.

94. The ocean rises and falls alternately. Its height is observed to be greatest at any given place at a certain time after the moon has passed the meridian of that place; it then decreases in height to a certain degree, after which it again gradually rises. These phenomena recur after nearly the same intervals of time, and are called the *ebbing* and *flowing* of the ocean, or, more commonly, the *tide*. The interval of time between low water and the following

two successive passages of the moon over the same semi-meridian be called a lunar day, there are generally, or on an average, two high tides in one lunar day.

95. The cause of the tides is the attraction of the sun and moon, but chiefly of the moon, on the waters of the ocean. In virtue of the universal principle of gravitation, the moon, by her attraction, draws, or raises the water towards her; but, because the power of attraction diminishes as the squares of the distances increase, the waters, on the opposite side of the earth, are not so much attracted as they are on the side nearest the moon. This want of attraction, together with the greater centrifugal force of the earth on its opposite side, produced in consequence of its greater distance from the common centre of gravity, between the earth and moon, causes the waters to rise on the opposite side, at the same time that they are raised by direct attraction on the side nearest the moon.

96. Thus the waters are constantly elevated on the sides of the earth opposite to each other above their common level, and consequently depressed at opposite points equally distant from these elevations. As the moon passes round the earth (see plate illustrating the tides), its solid and fluid parts are equally attracted by her influence according to their densities; but while the solid parts are at liberty to move only as a whole, the water obeys the slightest impulse, and thus tends towards the moon where her attraction is the strongest. Consequently, the waters are perpetually elevated immediately under the moon. If, therefore, the earth stood still, the influence of the moon's attraction would raise the tides only as she passed round the earth. But as the earth turns on her axis every twenty-four hours, and as the waters nearest the moon are constantly elevated, they will, in the course of twenty-four hours, move round the whole earth, and consequently from this cause there will be high water at every place once in twenty-four hours.

earth, by the earth's diurnal revolution, there will be low water at any given place six hours after it was high water at that place. But while it is high water under the moon, in consequence of her direct attraction, it is also high water on the opposite side of the earth, in consequence of her diminished attraction and the earth's centrifugal motion, and therefore it will be high water from this cause twelve hours after it was high water from the former cause, and six hours after it was low water from both causes.

97. Thus when it is high water directly under the moon and at the opposite side of the earth, it is low water at 90° from these points, and as the earth revolves once in twenty-four hours, there will be an alternate ebbing and flowing of the tide, at every place, once in six hours. But while the earth turns on her axis, the moon advances in her orbit, and consequently any given point on the earth will not come under the moon on one day so soon as it did on the day before. For this reason, high or low water at any place occurs about fifty minutes later on one day than it did the day before.

98. Thus far we have considered no other attractive influence except that of the moon, as affecting the waters of the ocean. But the sun, as already observed, has an effect upon the tides, though on account of his great distance, his influence is small when compared with that of the moon. When the sun and moon are in conjunction, which takes place at her change, or at new moon, or when they are in opposition, or at full moon, then their forces are united, or act on the waters in the same direction, and consequently the tides are elevated higher than usual, and on this account are called *spring tides*. See Plate illustrating the tides (p. 250).

99. But when the moon is in her quadratures, or quarters, the attraction of the sun tends to counteract that of the moon, and although his attraction does not elevate the waters and produce tides, his influence dimi-

in respect to each other, than when they are in conjunction, or opposition. This effect is represented by the right hand fig. on the plate, where the elevation of the tides is produced by the causes already explained; but their elevation is not so great as in the left hand fig., since the influence of the sun, tends to counteract the moon's attractive influence. These small tides are called *neap tides*, and happen only when the moon is in her quadratures.

100. The tides are not at their greatest heights at any given place when the moon is on the meridian of that place, but some time afterwards, because the water, having a motion forward, continues to advance by its own inertia, some time after the direct influence of the moon has ceased to affect it. This may be also observed with respect to the greatest heat and cold, which are not felt on the solstitial days, when the action of the sun is greatest and least.

101. ~~The tides rise to different heights in different~~ parts of the world; in the Bristol channel they rise above forty feet, and on the eastern coast of North America more than fifty feet; but their average height is considerably under twenty feet. In the Mediterranean sea, the tides are small, and in some places scarcely perceptible; this is occasioned by the inland character of that sea, and by the arrest given to the rise and fall of the tides by the straits of Gibraltar. For the progress of the tide wave see the chapter on Physical Geography.

THE USE OF THE GLOBES.

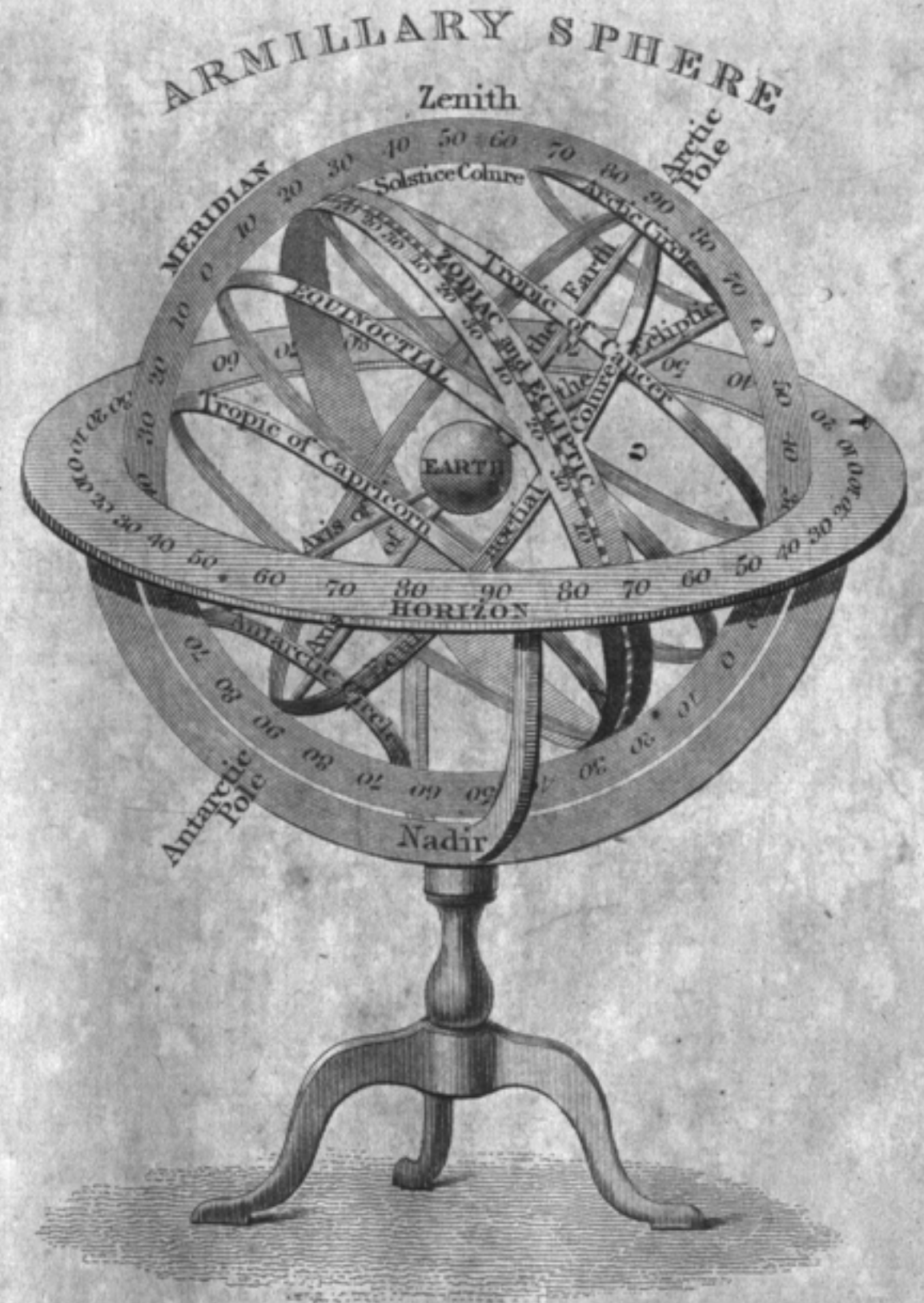
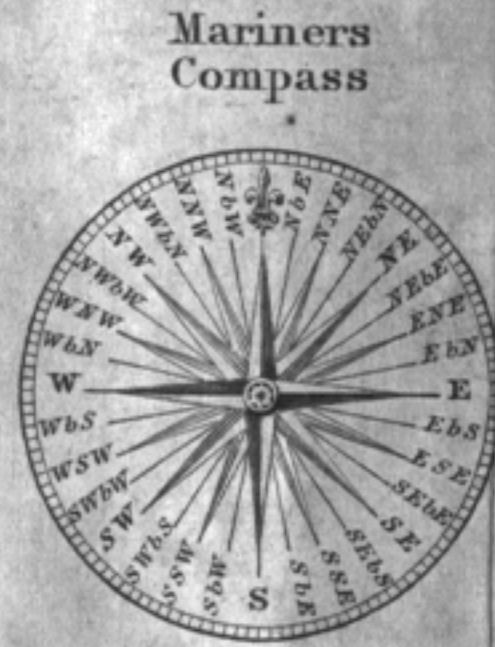
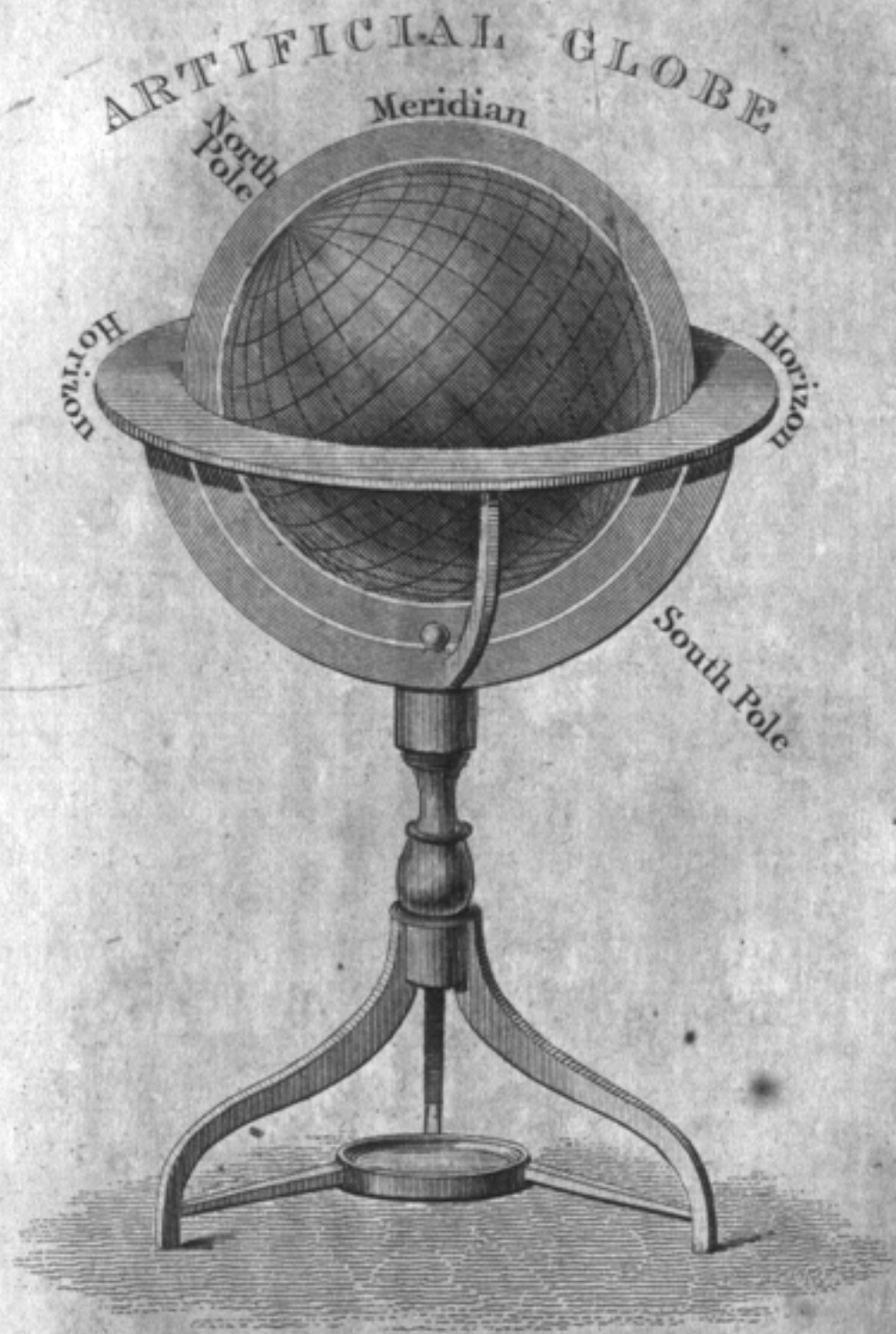
102. A **GLOBE**, or **SPHERE**, is a body every way perfectly round. *Artificial* globe is a term more particularly used to denote a globe of metal, plaster, paper, pasteboard, &c. If, upon such a globe, the several continents, empires, kingdoms, countries, cities, oceans, seas, rivers, &c., that are spread over the surface of our earth, be accurately delineated, it will form what is called a *terrestrial* globe*, and is so named in contradistinction to the *celestial* globe, which is an inverted representation of the heavens.

The use of these artificial globes is to illustrate the leading principles of geography and astronomy. For this purpose a number of circles &c. are drawn upon them.

103. The **AXIS OF THE EARTH** is an imaginary line passing through its centre, about which its diurnal rotation is performed, thereby causing an apparent revolution of the heavens, in the same time that the earth takes to turn upon its axis, but in a direction exactly the reverse of that in which its rotation is performed. This line is represented by the wire on which the artificial globe turns. (See plate illustrating the artificial globe.)

104. The **POLES OF THE EARTH** are the extremities of the axis. That on the north is called the *arctic*, and that on the south the *antarctic pole*. The *celestial poles* are

* The figure of the earth is not, strictly speaking, that of a true sphere, but of an oblate spheroid, being a little compressed at the polar, and swelled out at the equatorial regions. According to the most recent experiments and observations the equatorial diameter is 7925·648 miles; the polar 7899·170; their difference, 26·478 miles. The proportion of these diameters is very nearly 299 to 298; and consequently, their difference is $\frac{1}{299}$ of the greater, being too little to require or to admit of any deviation from a true sphere, even in the



those two imaginary points in the heavens through which the earth's axis, produced each way to the sphere of the heavens, would pass.

105. The **BRASS MERIDIAN** is the ring or circle in which the artificial globe is suspended by means of the axis; it is divided into four quadrants, of 90 degrees each. Two of these are numbered from the equator towards the poles, for the purpose of showing the latitudes of places, or the declinations of the celestial bodies: the other two quadrants are numbered from the poles towards the equator, and are used for elevating the poles of the globe.

106. The **CIRCLES** on the globe are of two kinds, *great* and *less*. **GREAT CIRCLES** are those whose planes pass through the centre of the globe, dividing it into two equal parts. **LESS CIRCLES** are those whose planes do not pass through the centre of the globe, and, consequently, divide it into two unequal parts.

107. All circles, whether great or less, are supposed to be divided into 360 equal parts, called **degrees**; each degree into sixty equal parts, called **minutes**; and each minute into sixty equal parts called **seconds**. Degrees are marked with a small cipher, minutes with a single dash, and seconds with a double dash; thus, $44^{\circ} 10' 12''$ signifies forty-four degrees, ten minutes, twelve seconds.

108. A **HEMISPHERE** is half a sphere, and therefore is half the surface of the globe; every great circle divides the globe into two hemispheres.

109. The **EQUATOR** is a great circle, at every point equidistant from the poles, and therefore dividing the globe into two equal parts, called the northern and southern hemispheres. In reference to the heavens, this circle is called the *Equinoctial*, because when the sun appears in it, the nights and days are equal all over the earth.

110. **MERIDIANS** are semicircles passing through the poles, and consequently cutting the equator at right angles. Every place has its own meridian, though there are commonly only twenty-four meridians drawn upon the globe, one of which

degree of the equator. The brass meridian, as the globe revolves on its axis, becomes a meridian to every point on its surface. When, by the diurnal rotation of the earth on its axis, the meridian of any place comes under the sun, it is said to be noon or mid-day at that place.

111. The **FIRST MERIDIAN** is that from which the longitude of places is reckoned. Modern geographers assume the meridian of the capital city, or principal observatory, of their own country as a first meridian; thus English geographers reckon their longitude from the meridian passing through the royal observatory at Greenwich.

112. The **ECLIPTIC** is the circle in which the plane of the earth's orbit is supposed to be extended in every direction, meets the sphere of the heavens, and is consequently the path in which the sun appears to perform his annual revolution, at the mean rate of about one degree in a day. This circle makes an angle of $23^{\circ} 28' 27''$ with the equinoctial, which it cuts in two opposite points, called the equinoctial points. It is divided into 12 equal parts, called signs, each occupying 30° of its circumference. The signs commence at the vernal equinox; their names, and the characters by which they are denoted, are as follows: Aries γ , Taurus τ , Gemini π , Cancer ϵ , Leo Ω , Virgo η , Libra ζ , Scorpio η , Sagittarius \dagger , Capricornus \wp , Aquarius \sim , Pisces \times . The ecliptic is drawn on the terrestrial globe, merely for the convenience of working some of the problems.

113. The **ZODIAC** in the heavens is a space extending eight or nine degrees on each side of the ecliptic, within which the motions of the moon and the principal planets are performed.

114. The **EQUINOCTIAL POINTS** are the two points in which the ecliptic and equator intersect. These points are so called, because when the sun is in either of them, day and night are equal all over the globe. They are the first points of Aries and Libra.

115. The **SOLSTITIAL POINTS** are the two points of the ecliptic at the greatest distance from the equator. They

are so named because, when the sun is near either of them, his meridian altitude continues nearly the same for several days together. They are the first points of Cancer and Capricorn.

116. The COLURES are two great circles perpendicular to the equator and to each other. One of them passes through the equinoctial points, and is called the *Equinoctial Colure*; the other passes through the solstitial points, and is called the *Solstitial Colure*.

117. The TROPICS are two small circles parallel to the equator (or equinoctial), and passing through the solstitial points; the northern is called the *Tropic of Cancer*, and the southern the *Tropic of Capricorn*.

118. The POLAR CIRCLES are two small circles parallel to the equator, and situated $23\frac{1}{2}^{\circ}$ from each pole, or at the same distance from the poles as the tropics are from the equator. That which surrounds the North Pole is called the *arctic circle*, and that surrounding the South Pole the *antarctic circle*.

The whole surface of the terrestrial globe is divided by the tropics and the polar circles into five zones, viz. one *torrid*, two *temperate*, and two *frigid* zones.

119. The TORRID ZONE comprehends the whole space between the tropics which bound it on the north and south. The breadth of this zone is $46^{\circ} 56'$ nearly.

120. The TWO TEMPERATE ZONES, which are the spaces between the tropics and the polar circles, are designated north or south, as they are in the northern or southern hemispheres; each of these occupies a space of $43^{\circ} 4'$, nearly.

121. The TWO FRIGID ZONES are the spaces within the polar circles, each having one of the poles for its centre.

122. The ZENITH is the point of the heavens immediately over the head of the spectator (see diagram of the projection of the sphere on the plane of a meridian). it is the elevated pole of our horizon.

123. The NADIR is the point in the heavens imme-

pressed pole of his horizon. The horizon is either *sensible* or *rational*.

124. The SENSIBLE HORIZON is the circle which bounds our view on an extensive plain, and in which the earth and sky seem to meet.

125. The RATIONAL HORIZON is an imaginary circle, the plane of which passes through the centre of the earth, parallel to the plane of the sensible horizon: it divides the heavens into two equal parts, called the visible and invisible hemispheres. This circle is represented by

126. The WOODEN HORIZON, circumscribing the artificial globe, which is commonly divided by several concentric circles. The first or innermost of these is marked *amplitude*, and is numbered from the east and west points, towards the north and south, to show the distance of any object from the east or west points of the horizon. The second, marked *azimuth*, is numbered from the north and south points, towards the east and west, to show the distance of any object from the north or south points of the horizon. The third contains the *points of the compass*, divided into half and quarter points; the degrees answering to which are to be found in the azimuth circle. The fourth circle contains the *signs of the zodiac*, with the character appropriated to each sign. The fifth contains the *degrees of the signs*, each sign comprehending 30° . The sixth contains the *days of the month*, answering to each degree of the sun's place in the ecliptic. The seventh contains the *names of the twelve calendar months*.

127. The LATITUDE OF ANY PLACE is its distance north or south from the equator, and is reckoned in degrees and minutes on that meridian of the place, as far as 90° in both directions.

128. The LONGITUDE OF ANY PLACE is the distance of the meridian of that place from the first meridian, and is either east or west, as the place is eastward or westward from that meridian. The greatest longitude any place can have is 180° or half the circumference of the

Obs. Longitude, at any given place on the earth, is measured in miles on the small circle parallel to the equator passing through that place. But as the parallel circles become smaller and smaller as they are at a greater distance from the equator, while the number of degrees in every circle is constantly 360, the length of a degree of longitude must necessarily decrease as the latitude becomes greater. The following table shows, in British miles, the length of a degree of the parallel passing through every fifth degree of latitude on a sphere whose diameter is equal to the equatorial diameter of the earth :—

Degrees of Latitude.	Miles.	Degrees of Latitude.	Miles.	Degrees of Latitude.	Miles.
0	69.16	35	56.65	65	29.23
5	68.90	40	52.98	70	23.65
10	68.11	45	48.90	75	17.90
15	66.80	50	44.45	80	12.01
20	64.99	55	39.67	85	6.03
25	62.68	60	34.58	90	0.00
30	59.89				

PROBLEMS ON THE TERRESTRIAL GLOBE.

PROBLEM I.—*To find the latitude and longitude of any given place ; also to find all those places that have the same longitude and the same latitude as the place given.*

Rule.—Turn the globe on its axis, till the given place comes under that part of the brazen meridian which is numbered from the equator towards the poles : the degree immediately over the place is the latitude sought, which is north or south, as the place is north or south of the equator ; the degree of the equator, which is intersected by the brass meridian, is the longitude of the given place, which is east or west, as the place lies to the right or left of the meridian passing through London. All those places which lie immediately under the graduated edge of the meridian, from pole to pole,

globe be turned round on its axis, all places passing immediately under the observed latitude, have the same latitude as that place.

All places from $66^{\circ} 28'$ north, to $66^{\circ} 28'$ south latitude, having the same longitude, will have noon, or any other hour of the day, at the same time; but the length of their natural day varies in different latitudes; all places under the same latitude have the same length of day and night; but the hour of the day varies with the difference of longitude.

Example 1. Required the latitude and longitude of Pekin; also what places have the same, or nearly the same longitude, and the same latitude, as that place.

Answer. The latitude of Pekin is about 40° N., and the longitude about 116° E.; the places having nearly the same longitude are, the island of Palawan, the eastern parts of Borneo, the island of Lombock, the western parts of New Holland, &c.; the places having nearly the same latitude are, Constantinople, Cagliari, Minorca, Toledo, Philadelphia, &c.

2. What are the latitude and longitude of Quebec? also, what other places have the same, or nearly the same, latitude and longitude?

3. Required the latitude and longitude of Cape Comorin; also, when it is noon at Cape Comorin, at what other places is it noon likewise; and what places have the same length of day and night.

4. Required the latitude and longitude of the following places; and what other places have the same, or nearly the same, longitude and latitude at those places respectively:—

Hobart Town,	Nankin,	Stockholm,
Ispahan,	Palermo,	Washington.
Mecca,	Rio Janeiro,	York.

PROBLEM II. — *To find the difference of latitude of any two places.*

Rule. — Find the latitude of each of the given places (by Prob. I.); then, if the places are both on the same side of the equator, take the difference of their latitudes; but if they are on opposite sides, take the sum.

PROBLEM III. — *To find the difference of longitude of any two places.*

Rule. — Find the longitude of each of the given places (by Prob. I.); then, if the places are both on the same side of the first meridian, take the difference of their longitudes; but if they are on opposite sides, take the sum. If the sum, in the latter case, exceeds 180° , subtract it from 360° .

Example 1. What is the difference of latitude and the difference of longitude of Mexico and Port Jackson?

Answer. Difference of latitude $53\frac{1}{2}^\circ$, difference of longitude $109\frac{1}{2}^\circ$.

2. Required the difference of latitude and difference of longitude of the following places:—

London and Cape Horn,
Alexandria and Cadiz,
St. Helena and North Cape,
Mount Heckla and Vesuvius,

Lisbon and Cape Farewell,
Straits of Magellan and Bhering's
Straits,
Calcutta and Naples.

PROBLEM IV. — *The longitude and latitude of any place being given, to find that place.*

Rule. — Find the given longitude on the equator and bring it to the brazen meridian, then under the given latitude will be found the place required.

Example 1. What place is that whose longitude is about 17° W., and latitude $32\frac{1}{2}^\circ$ N.?

Answer. Madeira Isle.

2. What places have the following longitudes and latitudes?

Long.	Lat.	Long.	Lat.
5° E.	$52\frac{1}{2}^\circ$ N.	102° E.	$33\frac{3}{4}^\circ$ S.
$18\frac{1}{2}^\circ$ E.	$34\frac{1}{2}^\circ$ S.	43° W.	23° S.
30° E.	$31\frac{1}{4}^\circ$ N.	$149\frac{1}{2}^\circ$ W.	$17\frac{1}{2}^\circ$ S.

PROBLEM V. — *To find the distance on a great circle between any two places.*

Rule. — Lay the graduated edge of the Quadrant of

Altitude * over both places; the degrees on the quadrant comprehended between the two places multiplied by 60 will give their distance in geographical miles, or, if multiplied by 69.2, will give the distance in English miles. †

Example 1. Required the distance between the Lizard Point and the island of Bermudas.

Answer. About $47^{\circ} = 2820$ geographical, or 3252 English miles.

2. Required the distance in geographical and English miles between the following places :—

Cape Verd and Cape Guardafui,	London and Lisbon,
Pondicherry and Bencoolen,	Stockholm and Masulipatam,
Cape Horn and Cape of Good	Bombay and Edinburgh,
Hope,	North Cape and Candi.
Owhyhee and Amboyna,	

PROBLEM VI. — *To find the Antæci, Periæci, and Antipodes to the inhabitants of any place.*

Def. The *Antæci* are those who live under the same meridian, but on opposite sides of the equator, and equally distant from it: — the *Periæci* are those who live on the same parallel of latitude, but under the opposite meridian: — the *Antipodes* are those who live in opposite hemispheres, are equally distant from the equator, and are also under opposite meridians. All these may be shown at once on the globe by the following

Rule. — Bring the poles of the globe into the horizon, and the given place to the eastern part of that circle; then, if the given place be in north latitude, observe, on the amplitude circle, how many degrees it is north of the eastern point of the horizon: the same number of degrees southward of the eastern point will show the *Antæci*; an equal number of degrees, counted from the west point of

* The Quadrant of Altitude is a thin flexible strip of brass, which can be screwed to any part of the brass Meridian; and is divided into
 † The distance in English miles is found by multiplying the distance in geographical miles by 69.2.

the horizon towards the north, will show the *Periæci*; and the same number of degrees, counted towards the south from the west, will point out the *Antipodes*. The same rule will apply if the given place be in south latitude, by reading south for north, and *vice versâ*.

Example 1. Required the antœci, periœci, and antipodes of the inhabitants of the Cape of Good Hope.

Answer. *Antœci*, north of the Gulf of Sidra in the Mediterranean Sea — *Periœci*, in the South Pacific Ocean, east of New Zealand. — *Antipodes*, in the North Pacific Ocean, north-west of the island of Donna Maria Lajara.

2. Required the antœci, periœci, and antipodes to the inhabitants of the following places : —

Moscow,
Quebec,

Bahia,
Jerusalem,

Pekin,
Archangel.

PROBLEM VII. — *The hour at any place being given, to find what hour it is in any other place.*

Rule. — Bring the place at which the hour is given to the meridian, and set the index to the given hour; then turn the globe till the other place comes to the meridian, and the index will show the required time.*

* If the difference of longitude between two places and the time at one of them be known, the time at the other may be easily found by calculation. It is noon at any place when the meridian of that place is immediately under the sun; and since the earth's rotation *with respect to the sun*, is performed in *exactly twenty-four hours*, there must be a revolution of 15° of the equator in one hour of time, or, in other words, 15° of the equator will correspond to one hour of time, 1° of the equator to four minutes of time, $1'$ of the equator to four seconds of time, &c. Hence it follows, that the difference of longitude of any two places may be converted into time by only multiplying by 4; observing that minutes of longitude, when so multiplied, produce seconds of time, and degrees of longitude produce minutes of time. The difference of longitude in time between the two places being thus found, if that for which the answer is sought lie to the east of that at which the time is given, count the difference of time forward from the given hour; but if it lie to the west, reckon the difference of time backward from that hour, and the result will be the required time at

Example 1. When it is eight o'clock in the morning at London, what time is it at Washington?

Answer. About 52 minutes past two in the morning.

2. When it is noon at London, what is the time at Rome?

3. When it is ten in the morning at Canton, what time is it at Jerusalem?

4. When it is seven o'clock P.M. at Lima, what time is it at London?

5. When it is four in the afternoon at Porto Bello, what hour is it at Aberdeen, Ispahan, Sierra Leone, Algiers, Acapulco, Medina, and Naples?

PROBLEM VIII. — *To find the sun's place in the ecliptic for any given day.*

Rule. — Find the given day in the circle of months on the horizon, against which, in the circle of signs, will be seen the degree of the sign in which the sun is for that day. The same sign and degree in the ecliptic is the sun's place required.

Example 1. Required the sun's place in the ecliptic on the 16th of August?

Answer. The 23d degree of Leo.

2. Required the sun's place in the ecliptic on each of the following days: —

1st January
1st August,

21st March,
15th October,

22d June,
20th November?

PROBLEM IX. — *To find the sun's declination on any given day, and all the places to which he will be vertical on that day.**

Rule. — Find the sun's place in the ecliptic (by Prob.

o'clock P.M. then $88^{\circ} 29' \times 4 = 5^h 53^m 56^s$ for the difference of longitude in time; which, added to the given time, because the place for which the time is sought lies to the east, gives $53^m 56^s$ past seven, or $6^m 4^s$ to eight o'clock in the evening for the time required.

As the index circle is small, and the index itself liable to be out of order, it is better to avoid using it altogether, and to count the time on the equator by the above rule. Every meridian marked on the globe counts one hour; and the degrees over, multiplied by 4, give the minutes.

* On most terrestrial globes there is a scale called the *analemma*,

VIII.), and bring it to the brazen meridian; the degree which stands immediately over the sun's place is his declination. Turn the globe on its axis, and all the places that pass under that degree will have the sun vertical on the given day.

Example 1. What is the sun's declination, and to what places will he be vertical on the 14th of November?

Answer. His declination is about 18° S., and he will be vertical to the island of Otaheite, the New Hebrides, part of the Friendly Isles, Arica in Peru, &c.

2. What is the sun's declination, and to what places will he be vertical on each of the following days:—

24th June,	20th March,	15th July,
10th February,	18th November,	21st Dec.?

PROBLEM X. — *The day of the month and hour of the day at any place being given, to find where the sun is then vertical.*

Rule. — Find the sun's declination (by Prob. IX.), and mark it on the brass meridian; then bring the given place to the meridian, and set the index to the given hour. Turn the globe till the index points to twelve at noon, and the place exactly under the sun's declination on the brazen meridian will have the sun vertical at the given time.

Example 1. When it is one o'clock in the morning at London on the 20th of January, where is the sun vertical?

Answer. At New Caledonia.

2. Where is the sun vertical on the 21st of December, when it is ten in the evening at London?

3. Where is the sun vertical on the 10th of June, when it is two in the morning at Cadiz?

4. When it is six o'clock in the morning at Rio Janeiro on the 4th of July, where is the sun vertical?

5. When it is half past seven o'clock in the evening at New York on the 5th of September, where is the sun vertical?

PROBLEM XI. — *A place being given in the Torrid Zone, to find the two days of the year on which the sun will be vertical to that place.*

Rule. — Find the latitude of the given place (by Prob.

points of the ecliptic pass under that latitude; seek those points of the ecliptic on the circle of signs on the horizon, and against them, in the circle of months, will be found the days required.*

Example 1. On what two days of the year will the sun be vertical at Barbadoes?

Answer. On the 18th of August and the 25th of April.

2. Required the two days of the year on which the sun is vertical to each of the following places:—

St. Helena,
Trincomalé,
Pelew Islands,

Quito,
Candi,
Dominica,

Cape Ambro,
Port Royal,
Cape St. Roque?

PROBLEM XII. — *To rectify the globe for the latitude of any given place.*

Rule. — Elevate the north or south pole, according as the latitude is north or south, so many degrees above the horizon as are equal to the latitude of the given place.

PROBLEM XIII. — *To find at what hour the sun rises and sets, and the length of day and night, at any place not in the Frigid Zones.*

Rule. — Rectify the globe for the latitude of the given place; find the sun's place in the ecliptic, bring it to the brass meridian, and set the index to twelve; bring the sun's place to the western edge of the horizon, and the index will show the time of his setting, which, doubled, will give the length of the day; turn the globe till the sun's place comes to the eastern edge of the horizon, and the index will point out the time of his rising, which, doubled, will give the length of the night.

Example 1. What time does the sun rise and set at London on the 21st of June, and what is the length of the day and night?

Answer. The sun rises about a quarter before four, and sets about

* Or rather, having found the latitude of the place, observe the

a quarter past eight ; the length of the day, therefore, is sixteen and a half, and the length of the night seven and a half hours. *

2. At what time does the sun rise and set, and what is the length of the day and night, at the following places on the respective days mentioned : —

Bagdad, 4th of August,
Copenhagen, 6th of March,
Madeira, 4th of June,
Quebec, 10th of October,
Lima, 14th of May,

Formosa, 16th of April,
Barcelona, 10th of May,
Falkland Isles, 12th of August,
Candia, 4th of September,
Berlin, 18th of November ?

3. What is the length * of the longest day at each of the following places : —

Corinth,

Stockholm,

Botany Bay ?

PROBLEM XIV. — *The day of the month and the hour of the day at any place being given, to find all those places of the earth where the sun is then rising, those places where the sun is setting, those where it is noon, and those where it is midnight, those that have morning twilight, and those that have evening twilight.*

Rule. — Find the place to which the sun is vertical at the given time (by Prob. X.), bring that place to the meridian, and elevate the pole till its altitude is equal to the sun's declination. Then to all places just along the *western* edge of the horizon, the sun is *rising* ; to those along the *eastern* edge, he is *setting* ; to those under that part of the brass meridian, which is *above* the horizon, it is *noon* ; to those immediately under that part of the brass meridian which is *below* the horizon, it is *midnight* ; those places which are below, but within eighteen degrees of, the western edge of the horizon, have morning twilight ; and those below the eastern horizon, but within eighteen degrees of it, have evening twilight.

Example 1. When it is ten o'clock in the morning at London on the longest day, to what places is the sun rising, setting, &c. &c. ?

Answer. It is rising at Lake Superior, St. Domingo, &c. Setting

* The 21st of June is the longest day at all places in the northern hemisphere, and the 21st of December is the longest day at all places

at Jesso, Nippon, Mindanao, Celebes, &c. Noon at Alexandria, Odessa, Petersburg, &c. Midnight near the Sandwich and Society Isles, &c. Morning twilight at Peru, Chili, Patagonia, &c.; and evening twilight at the Pelew Islands, Moluccas, the western coast of New Holland, &c.

2. When it is six o'clock in the morning at Minorca on the 17th of December, where is the sun rising, setting, &c. •

3. To what places is the sun rising, to what places is it setting, where is it noon, where is it midnight, &c. on the 10th of December when it is eight o'clock in the evening at London?

4. When it is midnight at Juan Fernandez on the 10th of June, where is it mid-day, and where is the sun rising, setting, and on the meridian?

PROBLEM XV. — *To find the length of total day at any place within the polar circles.*

Rule. — Rectify the globe for the latitude of the given place. Turn it on its axis, and observe the two points of the ecliptic, which come exactly to the north or south points of the horizon, according as the latitude of the given place is north or south. Find the corresponding two days in the circle of months on the horizon; the first is that on which total day begins, the second that on which it ends, and the interval between them the time of its continuance.

Example 1. What is the length of continual sunshine in the north of Spitzbergen, latitude $80\frac{1}{2}^{\circ}$ north?

Answer. Continual day begins on the 14th of April, and ends on the 28th of August, being about 136 days, of 24 hours each.

2. Required the length of continual day at Lancaster Sound?

3. How long does the sun continue to shine without setting at the following places:—

Melville Island,

North Cape,

New Siberia?

PROBLEM XVI. — *To find the sun's meridian altitude at any place on any given day.*

Rule. — Rectify the globe for the latitude of the place. Find the sun's place in the ecliptic, and bring it to the brass meridian; the number of degrees on the meridian between the horizon and the sun's place is the altitude required.

Example 1. What is the sun's meridian altitude at London on the 21st of December?

Answer. 15° .

2. Required the sun's meridian altitude at the following places on the respective days mentioned:—

Madras on the 4th of June,
Quito on the 20th of March,
Rome on Christmas-day,

Cape Horn on the 12th of May,
Cape of Good Hope 4th of April,
Barcelona on the 21st of Dec.

PROBLEM XVII. — *To find the sun's altitude and azimuth at any place, the day and hour being given.*

Rule. — Rectify the globe for the latitude of the place, and screw the quadrant of altitude on the brass meridian over that latitude: bring the sun's place in the ecliptic to the brass meridian, and set the index to 12; turn the globe till the index points to the given hour; bring the graduated edge of the quadrant to coincide with the sun's place: then the number of degrees on the quadrant, counting from the horizon to the sun's place, will be the sun's altitude, and the number of degrees on the horizon reckoned from the north or south point thereof to the graduated edge of the quadrant will show the azimuth.

Example 1. What is the sun's altitude and azimuth at the Cape of Good Hope at half past three o'clock P.M., on the 14th of January?

Answer. The altitude is 43° , and the azimuth 90° , or due west.

2. What is the sun's altitude and azimuth at the following places, the day of the month and hour of the day at each being as under:—

London at ten o'clock in the morning on the 10th of May,
Gibraltar at two o'clock in the afternoon on the 27th of July,
Nankin at eight o'clock in the morning on the 20th of March,
Rome at eleven o'clock in the morning on the 15th of August?

PROBLEM XVIII. — *To find the sun's amplitude, and the point of the compass towards which he rises or sets on a given day at any place.*

Rule. — Rectify the globe for the latitude of the place, and bring the sun's place in the ecliptic to the eastern semicircle of the horizon, and opposite to it, in the respective circle, will be the point of the compass towards which he rises or sets.

of the compass on which he rises: bring the sun's place to the western semicircle, and opposite to it will be seen the amplitude, and the point of the compass on which he sets.

Example 1. What is the sun's amplitude at London on the 21st of June?

Answer. 40° to the north of the east at rising, and 40° north of the west at setting.

2. Required the amplitude of the sun at the following places on the respective days mentioned:—

Washington on the 10th of December,

Mecca on the 20th of March,

Mindanao on the 4th of July.

Cape Palmas on the 4th of August?

3. On what points of the compass does the sun rise and set on the 4th of May at Boston in America?

PROBLEM XIX.—*The day of the month and the Sun's amplitude being given, to find the latitude of the place.*

Rule.—Bring the sun's place in the ecliptic to the eastern or western side of the horizon, according to the amplitude given, and elevate or depress the pole till the sun's place coincides with the given amplitude on the horizon—then the height of the pole will show the latitude of the place.

Example 1. The sun's amplitude at rising was observed to be about 40° south of the east on the 21st of December; required the latitude of the place?

Answer. 52° north.

2. The sun's amplitude was observed to be 25° from the east towards the north, when its declination was 20° north; required the latitude?

3. On the 21st of June the sun was observed to rise on the E. N. E. point of the horizon; what was the latitude of the place of observation?

4. The sun's amplitude at setting on the 18th of December was observed to be S. W.; what was the latitude of the place of observation?

PROBLEM XX.—*The time of a lunar eclipse being given to find all those places to which it is visible.*

Rule.—Find the place to which the sun is vertical at the given time; bring it to the meridian, and elevate the pole for the latitude of that place; then the eclipse will be visible at all those places which are below the horizon. If the antipodes of the place to which the sun is vertical be brought into the zenith, the eclipse will be visible to all the places *then* above the horizon. The antipodes may be brought into the zenith by merely elevating the opposite pole as many degrees as are equal to the sun's declination, and turning the globe half round on its axis.

Example 1. On the 31st of May, 1844, there was a total eclipse of the moon at 50 min. past ten o'clock in the evening, Greenwich time; where was it visible?

Answer. It was visible to nearly the whole of Europe; the entire continent of Africa, with the adjacent islands; and to Arabia, Persia, Hindostan, &c.

2. There was a total eclipse of the moon on the 24th of November, 1844, at 44 min. past eleven o'clock in the evening; where was it visible?

3. A partial eclipse of the moon happened on the 6th of December 1843, at 10 min. past twelve o'clock at night; where was it visible?

PROBLEMS ON THE CELESTIAL GLOBE.

PROBLEM 1.—*To find the right ascension and declination of the sun or a star.**

Def.—The right ascension of any celestial body is its distance from the first point of Aries, counted on the equinoctial; and its declination is its distance from the equinoctial, north or south, counted on the meridian passing through the body. The right ascension is usually reckoned in time, one hour corresponding to 15° . Thus,

* The right ascensions and declinations, latitudes and longitudes, of the moon and planets must be found in the Nautical Almanac or

instead of saying, right ascension $263^{\circ} 48'$, it is usual to say, right ascension 17 hours 35 minutes 12 seconds.

Rule. — Bring the sun's place in the ecliptic, or the given star, to that part of the brass meridian which is numbered from the equinoctial towards the poles; the degree immediately over it on the brass meridian, is the declination; the time or number of the degrees on the equinoctial, between the brass meridian and the first point of Aries, is the right ascension.

Example 1. Required the right ascension and declination of the star α , *Aldebaran*, in Taurus?

Answer. Right ascension 4 h. 27 m. or 67° , declination 16° north.

2. Required the right ascension and declination of the following stars: —

α , *Altair*, in Aquila,
 α , *Capella*, in Auriga,
 β , *Rigel*, in Orion,

β , *Mirach*, in Andromeda,
 α , *Achernar*, in Eridanus,
 δ , *Algorab*, in Corvus.

PROBLEM II. — *To find the latitude and longitude of a star.*

Def. — The longitude of any celestial body is its distance from the first point of Aries, counted on the ecliptic; and its latitude is its distance from the ecliptic, north or south, counted on a great circle passing through the body, and perpendicular to the ecliptic. The right ascensions and longitudes of celestial objects are continued eastward quite round the globe, and reckoned from 0° to 360° .

Rule. — Place the upper end of the quadrant of latitude on the north or south pole of the ecliptic, as the star is north or south of that line, and bring its graduated edge to the star; the number of degrees between the ecliptic and the star is the latitude, and the number of degrees on the ecliptic, reckoned from the first point of Aries to the quadrant, is the longitude of the star.

Example 1. Required the latitude and longitude of α , *Deneb*, in Cygnus?

Answer. Latitude 60° north, and longitude $11^{\circ} 4'$, or 4° in Pisces, or 334° from the first point of Aries.

2. Required the latitudes and the longitudes of the following

α , Fomalhaut in the S. Fish,
 α , Markab, in Pegasus,
 α , Antares, in Scorpio,

β , Pollux, in Gemini,
 α , Canopus, in Argo Navis,
 γ , Bellatrix, in Orion.

PROBLEM III. — *The right ascension and declination of any star, planet, comet, &c. being given, to find its place on the globe.*

Rule. — Bring the given degree of right ascension to the meridian, then under the given declination will be found the star, &c.

Example 1. Required the star whose right ascension is 211° , and declination 20° north?

Answer. α , Arcturus, in Boötes.

2. Required the stars whose right ascensions or declinations are as under: —

Right Ascensions.		Declinations.
h.	m.	
2	57 or 44	40° N.
5	7 — 76 $\frac{1}{2}$	$8\frac{1}{2}$ S.
16	20 — 244	26° S.
22	49 — 342	$30\frac{1}{2}$ S.
10	51 — 162 $\frac{1}{2}$	57° N.

PROBLEM IV. — *The latitude and longitude of a star, planet, &c. given, to find its place on the globe.*

Rule. — Place the division of the quadrant, marked α , on the given longitude in the ecliptic, and the upper end on the pole of the ecliptic; then under the given latitude on the graduated edge of the quadrant will be found the star or place of the planet, &c.

Example 1. The moon's longitude at midnight on the 13th of February, 1845, was $60^{\circ} 44'$, and the latitude $0^{\circ} 26'$ S.; what was her place on the globe or in the heavens?

Answer. She was in the constellation Taurus.

2. What stars have the following longitudes and latitudes: —

Longitudes.	Latitudes.
$35\frac{1}{4}^{\circ}$	$9\frac{1}{2}^{\circ}$ N.
$67\frac{1}{4}$	$5\frac{1}{2}$ S.
$111\frac{1}{2}$	$6\frac{1}{2}$ N.
$147\frac{1}{2}$	$\frac{1}{2}$ N.

PROBLEM V.—*The latitude of a place, day of the month, and hour being given, to represent by the celestial globe the face of the heavens at that time.*

Rule.—Elevate the pole so many degrees above the horizon as are equal to the latitude of the place; find the sun's place in the ecliptic, bring it to the brass meridian, and set the index to twelve; turn the globe till the index points to the given hour, and the globe will present a view of the constellations corresponding with the state of the heavens at the time proposed.

Example 1. Required the state of the heavens for eight o'clock in the evening at London on the 1st of November?

Answer. Lacerta is in the zenith, from which point to the north pole the meridian is occupied by Cepheus. Between the pole and the horizon are the tail of Draco and Ursa Major. From the zenith to the south, Pegasus, Aquarius, and Piscis Australis are on the meridian. Andromeda, Triangulum, Aries, and Taurus are met with from the zenith to the eastern point of the horizon; and from the zenith to the western point we find Cygnus, Lyra, Hercules, and Ophiuchus. Between the zenith and the N. E. quarter are Cassiopeia, Camelopardalus, and Auriga. From the zenith between the E. and S. E., are part of Andromeda and Pisces, the whole of Triangulum and Aries, and part of Cetus. From the zenith, and between the S. E. and S. are part of Pegasus, Pisces, and part of Aquarius, Cetus, and Piscis Australis. From the zenith, and between the S. and S. W., are part of Cygnus, Delphinus, Equuleus, part of Aquarius, the whole of Capricornus, and part of Sagittarius. From the zenith, and between the S. W. and W., are Cygnus, Lyra, Vulpecula, Aquila, Taurus Poniatowski, part of Antinous, and Ophiuchus. From the zenith, and between the W. and N. W., are part of Draco, Hercules, Corona Borealis, and Bootes. From the zenith, and between the N. W. and N., are Ursa Minor, part of Draco, Ursa Major, and Bootes, and the whole of Canes Venatici. From the zenith, and between the N. and N. E., are part of Cepheus, the whole of Camelopardalus, part of Ursa Major, the whole of Lyra, and part of Auriga, and Gemini. From the zenith, and between the N. E. and E., are part of Cassiopeia, Andromeda, Perseus, and Taurus, with the Hyades and Pleiades.*

* In order to become acquainted with the constellations in the heavens, it will be necessary after solving the problem as above, to fix the globe in that position in its stand, and to remove the whole into the open air; then to place it due north and south by a meridian line, or a mariner's compass, making due allowance for the variation. Then if the flat end of a pencil be placed on a star upon the globe, so

2. Required the state of the heavens at London on the following days at the time specified :—

January 21st, at eight in the evening ; February 28th, at ten at night ; September 6th, at eight o'clock in the evening ?

3. Required the state of the heavens at the Cape of Good Hope on the 15th of September, at eleven o'clock at night ?

PROBLEM VI. — *To find when any star, planet*, &c. will rise, culminate, or set, at any given place.*

Rule. — Elevate the pole so many degrees above the horizon as are equal to the latitude of the place ; bring the sun's place to the meridian, and set the index to twelve. Turn the globe till the star or place of the planet comes to the eastern verge of the horizon, and the index will show the time of its rising ; bring it to the meridian, and the index will show the time of its culminating ; continue the motion of the globe till it arrives at the western edge of the horizon, and the index will, in like manner, show the time of its setting.

Obs. When the globe is elevated for the latitude of the given place, it will be found that, within a certain distance of the elevated pole, a number of stars never set ; while a number of stars, equally distant from the depressed pole, never rise. The former are said to be within the circle of *perpetual apparition*, and the latter within the circle of *perpetual occultation*, of that place.

Example 1. At what time does *Sirius* rise, culminate, and set, on the 31st of January, at London ?

Answer. It rises about a quarter past five in the evening, culminates about a quarter before ten, and sets about a quarter past two in the morning.

2. At what time does *Procyon* rise, culminate, and set at Paris, on the 12th of September ?

3. On the 1st of October, 1845, the right ascension of Mars will be 21 hrs. 43 min., and his declination $18^{\circ} 16' S.$; what time will he rise, culminate, and set at Greenwich on that day ?

* The right ascension and declination (or latitude and longitude) of a planet must be taken from an ephemeris, and its place on the

PROBLEM VII. — *To find how many hours any star is above the horizon of any given place, or the length of its diurnal arc at that place.*

Rule. — Elevate the pole for the latitude of the place: bring the star to the eastern edge of the horizon, and set the index to twelve; turn the globe westward till the star comes to the western edge of the horizon, and the number of hours passed over by the index is the length of the diurnal arc of that star.

Example 1. How long does *Arcturus* continue above the horizon of London?

Answer. About fifteen hours and a half.

2. How many hours do the following stars continue above the horizon of London?

α *Castor*, in Gemini; β *Deneb*, in Leo; β *Albireo*, in Cygnus.

3. How long is α *Menkur*, in Cetus, above the horizon of Lisbon?

A VOCABULARY OF PROPER NAMES.

N. B. In cases where the classical names that correspond to modern names are given, they immediately follow the latter, within parentheses, thus: *Adrianople* (*Hadrianopolis*).—Fr. French; Ger. German; Gr. Greek.

Aalborg, a city and port of Denmark, prov. Jütland, on S. bank of Lim Fjord. Pop. 7,500.

Aargau (Fr. *Argovie*), a cant. of Switzerland; cap. Aarau.

Aarhus, a seaport town of Denmark, E. coast of Jutland. Pop. 8,000.

Abbekouta, an inland town of W. Africa, near Guinea coast. Pop. 80,000.

Abbeville, a manufacturing town of France, department Somme, and on the river Somme. Pop. 17,000.

Aberdeen, a seaport town of Scotland, capital of county of same name. It consists of Old and New Aberdeen, the former at mouth of river Dee, the latter at that of the Don. Pop. 74,000.

Abergavenny, a town of Monmouthshire, England, on river Usk. Pop. 4,600.

Aberystwith, a seaport town of Cardiganshire, S. Wales. Pop. 5,600.

Abo, a seaport town of Russia, the former cap. of Finland. Pop. 14,000.

Aboukir (*Canopus*), a town and bay on the coast of Egypt, celebrated for Nelson's victory in 1798.

Abyssinia, or *Habesh*, a country of E. Africa: it includes several distinct states, amongst which are the kingdoms of Amhara, Tigre, and Shoa.

Acapulco, a seaport town of Mexico, on the Pacific Ocean. Pop. 3,500.

Acheen, a town and native kingdom of Sumatra, near the N. extremity of that island.

Acre, or *Akka* (*Accho* or *Ptolemais*), the St. Jean d'Acre of the Crusaders, a fortified seaport town of Syria, near Mt. Carmel. Pop. 5,000.

Adana, a town of Asiatic Turkey in

4 miles distant from the E. shore of St. Vincent Gulf. Pop. 25,000.

Aden, a seaport town of Arabia, situated a short distance E. of the Str. of Bab-el-Mandeb. It has belonged to Britain since 1839, and is a station on the overland route to India. Pop. 40,000.

Adige, a river of N. Italy, flowing into the Adriatic.

Adrianople (*Hadrianopolis*), a city of European Turkey, prov. Roumelia, on the river Maritza. Pop. 100,000.

Adriatic Sea, an arm of the Mediterranean, stretching northward, between Italy and European Turkey.

Afghanistan, an inland country of Asia. Its chief cities are Caubul, Candahar, and Herat.

Africa, one of the great divisions of the globe.

Agen, a city of France, dep. Lot et Garonne, and on river Garonne. Pop. 15,500.

Aggerhus, a prov. of Norway, ch. tn. Christiania.

Agincourt, or *Azincourt*, a village of France, dep. Pas de Calais, celebrated for the victory gained by Henry V. of England, in 1415.

Agra, a city of Brit. India, the seat of gov. for the N.W. provinces of the Bengal presidency. It lies on the river Jumna, and has 70,000 inhab.

Agram, a town of Austria, prov. Croatia. Pop. 15,000.

Ahmedabad, an inland city of Brit. India, Bombay presid. Pop. 100,000.

Airdrie, a town of Lanarkshire, Scotland. Pop. 13,000.

Aire, a river of England, ch. tn.

Aix-la-Chapelle, Ger. *Aachen*, a city of Prussian Germany, Rhine prov., with a magnificent cathedral. Pop. 60,000.

Ajmere, a city of Brit. India, prov. Rajpootana. Pop. 25,000.

Akyab, a seaport town of Aracan, Brit. India. Pop. 5,000.

Alabama, one of the U. S. of America, bordering on the Gulf of Mexico.

Albania, a prov. of Europ. Turkey, on its western side, comprehending the ancient Illyria and Epirus.

Albacete, an inland town and province of Spain, within Murcia. Pop. (of town) 13,000.

Albany, a city of New York, U. S., on the river Hudson. Pop. 50,000.

Alderney, Fr. *Aurigny*, an island in the English Channel, near the French coast. It belongs to Britain.

Aleppo, or *Haleb*, a city of Asiat. Turkey, in the North of Syria, on the river Kuweik. Pop. 70,000.

Alessandria, a fortified city of Italy, on the river Tanaro, 47 m. S. E. of Turin. Pop. 54,000.

Alcutian Islands, a volcanic chain in the N. Pacific Ocean, extending between the American and Asiatic continents.

Alexandria, a seaport town of Egypt, on the Mediterranean coast, a short distance W. of the Nile. It was founded by Alexander the Great, B.C. 332. Pop. 400,000.

Algiers, a city and seaport of N. Africa, capital of the French prov. of Algeria. Pop. 60,000.

Alicant, a seaport of Spain, on the Mediterranean coast. Pop. 20,000.

Al-jezireh (Mesopotamia), a territory of Asiat. Turkey, lying between the rivers Euphrates and Tigris.

Allahabad, a city of Brit. India, situated at the junction of the rivers Ganges and Jumna. Pop. 65,000.

Allah-shchr (Philadelphia), a city of Asia Minor, one of the 'Seven Churches.' Pop. 15,000.

Alleghany, or *Apalachian Mountains*, an extensive mountain-system on the E. side of the N. American continent.

Alloa, a seaport of Clackmannanshire, Scotland, on the river Forth. Pop. 6,500.

Almeida, a fortified town of Portugal, prov. Beira. Pop. 6,000.

Almeria, a seaport of Spain, on the Mediterranean. Pop. 19,000.

Almora, a fortified town of Brit. India, prov. Kumaon, within the Himalaya region.

Alps, the highest amongst the mountain-systems of Europe. Their loftiest summit, Mont Blanc, reaches 15,744 ft. above the sea.

Altai, a mountain-system of interior

Altona, a town of Holstein, Denmark, on the river Elbe, adjacent to Hamburg. Pop. 46,000.

Amarapoora, a city on the river Irrawady, in S. E. Asia, the capital of the Burmese empire. Pop. 90,000.

Amazon, or *Maranon*, the longest river of S. America. It rises in the Andes, and has a course of 4,000 m. to the Atlantic Ocean.

Amboyna, an island of the Dutch E. Indies, lat. 3° 41' S., long. 128° 10' E. Pop. 186,000.

America, one of the great divisions of the globe.

Amherst, a seaport of Brit. India, on Gulf of Martaban. Pop. 5,000.

Amiens, a city of France, dep. Somme, and on the river Somme. Pop. 58,000.

Amour, or *Segalien*, a river of eastern Asia, flowing through Manchouria into the Gulf of Tartary.

Amoy, an island and port of China, on the S. E. coast, prov. Fo-kien.

Amritsir, a city of Brit. India, prov. Punjab. Pop. 90,000.

Amsterdam, a maritime city of the Netherlands, prov. N. Holland, on an estuary of the Zuyder Zee. Pop. 248,000.

Amsterdam Island, in the Indian Ocean, lat 38° S., long. 77° 48' E.

Ancona, a seaport town of Italy, on the Adriatic. Pop. 29,000.

Andaman Islands, a group situated in the B. of Bengal, belonging to Britain.

Andes, the most extensive and elevated mountain-system in the New World, stretching along the whole W. side of S. America. Highest summit, Aconcagua, 23,910 ft.

Andorre, a town and independent state on the border of France and Spain, within the Pyrenees.

Andrews, St., a city and seaport of Scotland, co. Fife: the seat of a university. Pop. 5,200.

Angers (Juliomagus), a city of France, dep. Maine et Loire, on river Sarthe. Pop. 36,000.

Anglesey, an island and co. of N. Wales, divided from the mainland by the Menai Strait.

Angola, a country of W. Africa, S. of the equator.

Angora (Ancyra), an inland city of Asia Minor. Pop. 50,000.

Anhalt, a country and sovereign duchy of Northern Germany, cap. Dessau.

Annabon, an island in the Gulf of Guinea.

Annapolis, a seaport town of Maryland, U. S. Pop. 4,000.

Annecy, a town of France, dep. Haute Savoie. Pop. 9,700.

Anticosti, an island at the entrance of the river St. Lawrence, N. America.

Antigua, an island in the Brit. W. Indies, with 26,000 inh.

Antioch (*Antiochia*), a town of N. Syria, on the Orontes. Pop. 5,000. In ancient times a great and splendid city.

Antrim, a co. of Ireland, prov. Ulster: the Giant's Causeway is on its N. coast.

Antwerp, Fr. *Anvers*, a city and port of Belgium, on river Scheldt, 60 m. above its mouth. Pop. 112,000.

Aosta, a city of N. Italy, on the Dora Baltea river. Pop. 6,000.

Apennines, a chain of mountains running lengthwise through the Italian peninsula.

Arabia, a country of S. W. Asia. Area, 1,000,000 sq. m. Pop. about 12,000,000.

Aracan, a country of Brit. India, E. of the Bay of Bengal. Area, 16,000 sq. m. Pop. 250,000.

Aral, an inland sea or lake of Asia.

Ararat, or *Agri-Dagh*, a mountain of W. Asia, within Russian Armenia, 17,260 ft. in height.

Arbroath, or *Aberbrothock*, a seaport of Forfarshire, Scotland. Pop. 17,600.

Archangel, a maritime city of European Russia, on the river Dvina, near its entrance into the White Sea. Pop. 25,000.

Archipelago (*Ægæum Mare*), a sea on the E. side of Greece, between that country and Asia Minor.

*Ardenne*s, a dep. in the N. of France, deriving its name from the ancient forest of Ardenne, of which it forms a part.

Argyle, a county of Scotland, on its western side.

Arica, a seaport of Peru. Pop. 3,500.

Arkansas, one of the U. S. of N. America; also a river of that region, an affluent of the Mississippi.

Arles (*Arelate*), a town in the S. of France, dep. Bouches du Rhone, on the river Rhone. Pop. 25,000.

Armenia, a country of W. Asia, now divided between Russia, Turkey, and Persia.

Arno, a river of Italy, flowing into the Mediterranean.

Arona, a town of N. Italy, on the Lago Maggiore, near its foot.

Ascension, a British island, in the S. Atlantic Ocean.

Ashantee, a country of W. Africa, near the Guinea coast.

Ashton-under-Lyne, a manufacturing town of Lancashire. Pop. 34,800.

Asia, one of the great divisions of the globe.

Assouan, or *Essouan* (*Sycne*), the S. frontier-town of Egypt, on the E. bank of the river Nile.

Astrakhan, a city of European Russia, on the river Volga, near its entrance into the Caspian Sea. Pop. 45,000.

Athens (*Athenæ*), a celebrated city of ancient Greece, and the cap. of the modern kingdom of Greece. Pop. 42,000.

Athlone, an inland town of Ireland, on the Shannon, cos. Westmeath and Roscommon. Pop. 5,600.

Athos, or *Monte Santo*, a mountain of European Turkey, on the N. shore of the Archipelago.

Atlantic Ocean, one of the great divisions of the waters of the globe.

Atlas, a mountain-system of N. Africa, near the Mediterranean coast.

Auckland, the capital of New Zealand, situated on the N. island. Pop. 6,000.

Auckland Islands, a group in the S. Pacific Ocean, S. of New Zealand.

Augsburg (*Augusta Vindelicorum*), a commercial city of Bavaria, situated at the junction of the rivers Lech and Wertach. Pop. 45,000.

Augusta, the capital city of Maine, U. S. Pop. 8,000.—A city of Georgia, U. S. Pop. 9,300.

Aurangabad, an inland city of India, Nizam's dominions. Pop. 60,000.

Austell, St., a mining town of Cornwall, England. Pop. 3,800.

Austerlitz, a small town of Moravia, Austrian Emp., celebrated for the battle gained by Napoleon I. in 1805.

Australia, the smallest of the continents, and situated entirely within the southern hemisphere.

Australia, South, a British colony, occupying a part of the Australian continent. Pop. 135,000. Chief town, Adelaide.

Australia, Western, a British colony, and part of the Australian continent. Pop. 15,000. Chief town, Perth.

Austria, a prov. of the Austrian Empire, divided into Upper and Lower.

Auxerre, a city of France, dep. Yonne, and on river Yonne. Pop. 11,000.

Ava, a city on the river Irawady, the former capital of Burmah, now decayed.

Averno (*Avernus*: Gr. *Aopvos*), a small lake of Italy, near the N. side of the B. of Naples.

Avignon, a city of France, on the Rhone, dep. Vaucluse. Pop. 26,000.

Aylesbury, a town of Buckinghamshire, England. Pop. 6,000.

Ayr, a town, river, and county of Scotland. Pop. of town, 18,500.

Azer, a town of European Russia, on the Don, a few miles above its entrance into the Sea of Azov.

Raulbek (Heliopolis), an inland town of Syria, distinguished by its magnificent ruins.

Bab-el-Mandeb, a strait uniting the Red Sea with the Indian Ocean. It signifies 'the gate of tears.'

Babylon, the ancient capital of the Babylonian Empire, situated in the neighbourhood of the modern town of Hillah, on the river Euphrates.

Back, a river of Brit. N. America, flowing into the Arctic Ocean.

Badajoz, a fortified city of Estremadura, Spain, on the S. bank of the Guadiana. Pop. 12,000.

Baden, a grand-duchy of Germany. Chief town, Carlsruhe.

Baffin Bay, an extensive arm of the N. Atlantic Ocean.

Bagdad, a city of Asiat. Turkey, on the river Tigris, the former cap. of the Caliphate. Pop. 60,000.

Bahama Islands, an extensive chain, forming part of the Brit. W. Indies. Their chief town is Nassau, on the island of New Providence.

Bahia, a maritime city of Brazil, with extensive commerce. Pop. 120,000.

Baku, a town and port of Asiat. Russia on the Caspian Sea.

Balaklava, a port on the S. shore of the Crimea, Europ. Russia.

Balitore, a seaport of Brit. India, Bengal presid. Pop. 10,000.

Balkan Mountains, a chain extending, in the direction of E. and W., through Europ. Turkey.

Baltic Sea, an extensive arm of the Atlantic, which penetrates the N. W. portion of the European continent. Its channels of entrance are the Sound, the Great Belt, and the Little Belt.

Baltimore, a maritime city of Maryland, U. S., on the Patapsco river. Pop. 214,000.

Banat, the, an extensive prov. in the S. W. of Hungary, to the E. of the Danube.

Banca, an island in the E. Indies, lying E. of Sumatra, famous for its tin mine.

Banda Isles, a group belonging to the Moluccas arch., E. Indies.

Banff, a city and county of Scotland. Pop. (of city) 6,800.

Bangalore, a city of S. India, within the protected state of Mysore. Pop. 60,000.

Bankok, the capital city of the king-

Bangor, an episcopal city of N. Wales, co. Caernarvon. Pop. 6,700.

Bann, a river of Ireland, prov. Ulster.

Barbadoes, an island of the Brit. W. Indies, cap. Bridgetown.

Barbary, a region of N. Africa, comprehending the states of Morocco, Tunis, Tripoli, and the French prov. of Algeria.

Barcelona, a maritime city of Spain, on the Mediterranean. Pop. 252,000.

Barilly, a city of Brit. India, upper prov. of Bengal presid. Pop. 92,000.

Bari, a seaport town of S. Italy, on the Adriatic. Pop. 20,000.

Barnet, a town of Hertfordshire, England, famous for a battle in 1471.

Barnsley, a town of Yorkshire, W. Riding, a great seat of the linen manufacture. Pop. 18,000.

Barnstaple, a seaport of Devon, England, on the river Taw, near its mouth. Pop. 10,700.

Baroche, or *Broach*, a seaport of Brit. India, Bombay presid., near the mouth of the river Nerbudda. Pop. 31,000.

Barrow, a river of Ireland, prov. Leinster.

Basel, or *Bâle*, a city and canton of Switzerland. The city stands on the Rhine, and has 38,000 inh.

Bassorah, or *Basrah*, a city of Asiat. Turkey, on the Shat-el-Arab (united Tigris and Euphrates), a short distance above the Persian Gulf. Pop. 50,000.

Bass Strait, the channel which divides Tasmania from the Australian continent.

Bastia, a seaport town of Corsica. Pop. 13,000.

Batavia, a city and seaport of Java, the cap. of the Dutch E. Indies, and a place of great trade. Pop. 150,000.

Bath (Aquæ Solis), a city of Somersetshire, England, on the river Avon. Pop. 52,500.

Bathurst, an inland town of N. S. Wales, on the Macquarie river. Pop. 5,000. — A town of W. Africa, on St. Mary Island, at the mouth of the river Gambia.

Bautzen, an inland town of Germany, kingdom of Saxony, with 12,000 inh.

Bavaria, a kingdom of central Europe, one of the members of the German Confederation. Cap. Munich.

Bayonne, a fortified city of France, dep. Basses Pyrénées, at the mouth of river Adour. Pop. 14,000.

Bedford, a town and inland county of England. The town stands on the river Ouse. Pop. 13,400.

Begharmich, a country of central Africa to the S. E. of lake Chad.

Behring Strait, the channel which communicates between the Pacific and Arctic Oceans.

Beira, a prov. of Portugal.

Belfast, a city and seaport of Ireland, co. Antrim, at mouth of river Lagan; the chief seat of the linen manufacture. Pop. 120,000.

Belgium, a kingdom of W. Europe. Ch. town, Brussels.

Belgrade (*Singidunum*), a fortified city of Servia, European Turkey, on the S. bank of the Danube. Pop. 30,000.

Belize, a town of Central America, the cap. of Brit. Honduras.

Belluno, a city of Austrian Italy, with 10,000 inhab.

Beloochistan, a country of Asia, to the W. of India. Its chief city is Kelat.

Benares, a city of Brit. India, Bengal pres., on the N. bank of the Ganges. Pop. 200,000.

Bencoolen, a seaport town of the Dutch E. Indies, on the W. coast of Sumatra. Pop. 6,000.

Benevento (*Beneventum*), an inland city of S. Italy, cap. prov. of same name. Pop. 18,000.

Bengal, an extensive prov. of West India, inclusive of the mouths of the Ganges. Calcutta is within its limits.

Benguela, a country of W. Africa, S. of the equator.

Benin, a country of W. Africa, towards the mouth of the Niger and the E. extremity of the Gulf of Guinea.

Berar, an inland prov. of Brit. India, Bengal pres. Ch. town, Nagpore.

Berbice, a river and country of Brit. Guiana.

Bergamo, a city of Lombardy, N. Italy, with 35,000 inh.

Bergen, a seaport town of Norway. Pop. 26,000.

Bergen-op-Zoom, a fortified town of the Netherlands, prov. Brabant. Pop. 7,000.

Berkshire, an inland co. of England.

Berlin, a city of Germany, the cap. of the kingdom of Prussia. It stands on the river Spree, prov. Brandenburg, and has 548,000 inh.

Bermuda Islands, a group in the N. Atlantic, belonging to Britain.

Bern, a city and canton of Switzerland. The city, which is the cap. of the Swiss Confed., stands on the river Aar. Pop. 30,000.

Berwick-upon-Tweed, a town of England, co. Northumberland, on the Scotch border. Pop. 13,250.

Berwickshire, a co. of Scotland.

Besançon (*Vesontio*), a city of France, dep. Doubs. Pop. 28,000.

Bessarabia, a gov. of European Russia, between the rivers Pruth and Dniester.

Beverley, a town of England, Yorkshire, E. riding. Pop. 9,600.

Bethlehem, a small town of Palestine, to the S. of Jerusalem: the birth-place of our Lord. Pop. 3,000.

Beyrout, a maritime town of Syria. Pop. 50,000.

Bilboa, a city of Spain, prov. Biscay. Pop. 12,000.

Birkenhead, a seaport of Cheshire, England, on the Mersey, opposite to Liverpool. Pop. 36,000.

Birmingham, a town of England, co. Warwick, the centre of the iron and hardware manufacture. Pop. 296,000.

Biscay, a prov. of Spain, bordering on the extensive bay of the same name.

Bittis, a town of Asiatic Turkey, near the S. W. shore of L. Van. Pop. 10,000.

Black Forest, Ger. *Schwarz Wald*, a mountain-chain of S. Germany, bordering the E. bank of the Rhine, and within the grand duchy of Baden.

Blackburn, a manufacturing town of Lancashire, England. Pop. 63,000.

Blenheim, a village of Bavaria, near N. bank of river Danube, famous for Marlborough's victory in 1704.

Blois, a city of France, dep. Loir et Cher, and on the river Loire. Pop. 3,000.

Bogotá, Santa Fé de, an inland city, the cap. of New Granada, S. America. Pop. 40,000.

Bohemia, an extensive prov. of Austrian Germany. Ch. town, Prague.

Bois-le-Duc: Dutch, *Hertogensbosch*, a fortified town of the Netherlands, prov. Brabant. Pop. 21,000.

Bojador, a cape of W. Africa, lat. 26° 7' N.

Bokhara, a city of Central Asia, the cap. of a khanat. It lies in the valley of the Zerafshan, and has 70,000 inh.

Bolivia, a republic of S. America, cap. Chuquisaca. Pop. 2,000,000.

Bologna (*Felsina* aft. *Bononia*), a city of N. Italy, to the E. of the Apennines. Pop. 75,000.

Bolton, a manufacturing town of Lancashire, England. Pop. 70,000.

Bombay, a maritime city of Brit. India, the cap. of a presidency, situated on an island of the same name. Pop. 500,000.

Bona, a seaport of Algeria, N. Africa. Pop. 12,000.

Bonn, a town of Prussian Germany, on the Rhine. Pop. 13,000.

Bonny River, one of the outlets of the Niger, W. Africa.

Bootan, an independent state of N. India. Cap. Tassisudon.

Boothia, a peninsula of Brit. N. America, within the Arctic Circle.

Bordeaux (*Burdigala*), a commercial city and seaport of France, on the river Garonne, the chief seat of the wine trade. Pop. 163,000.

Borneo, the largest island of the E. Indian Archipelago. It includes several native states. Pop. estimated at 2,000,000.

Bornholm, a Danish island in the Baltic Sea.

Bornou, a kingdom of Central Africa, W. of L. Chad. Cap. Kouka.

Borodino, a village of European Russia, near Moscow, celebrated for a battle in 1812.

Bosnia, a prov. of European Turkey.

Bosphorus, or *Channel of Constantinople*, the strait which connects the Sea of Marmora with the Black Sea.

Boston, a commercial town of England, co. Lincoln, on the river Witham, near its mouth. Pop. 14,000.—A city of Massachusetts, U. S. Pop. 178,000.

Botzen, a town of Austria, prov. Tyrol, on the river Eisack. Pop. 10,000.

Bothnia, *Gulf of*, the northern arm of the Baltic.

Boulogne (*Gesoriacum*), a seaport of France, dep. Pas de Calais. Pop. 30,000.

Bourbon, or *Réunion*, a French island in the Indian Ocean, E. of Madagascar. Pop. St. Denis.

Boussa, a town of Central Africa, on the Lower Niger.

Bradford, a manufacturing town of Yorkshire, W. Riding. Pop. 106,000.—A town of Wiltshire, on the Lower Avon. Pop. 4,200.

Braganza, a town of Portugal, prov. Tras os Montes. Pop. 4,000.

Brahmapootra, a river of S. Asia. It flows through Assam, and, uniting with the Ganges, enters the B. of Bengal.

Brazil, a large country of S. America. Pop. 7,678,000. Cap. Rio Janeiro. It forms an empire.

Brecknock, or *Brecon*, a town and county of S. Wales.

Breda, a fortified town of the Netherlands, prov. Brabant. Pop. 12,000.

Bremen, a free city of Germany, on the river Weser, near its mouth. Pop. 100,000.

Brescia, a city of Lombardy, N. Italy. Pop. 35,000.

Breslau, a city of Prussian Germany, prov. Silesia, on the river Oder. Pop. 146,000.

Brest, a seaport and arsenal of France, dep. Finistère. Pop. 36,000.

Bridgewater, a town of England, co. Somerset, on the river Parret. Pop. 14,300.

Brighton, a maritime town of Eng.

Brindisi (*Brundisium*), a seaport of S. Italy, on the Adriatic. Pop. 7,000.

Bristol, a city and commercial port of England, co. Gloucester, on the river Avon, 8 miles above the sea. Pop. 154,000.

Brixham, a seaport town of England, co. Devon, on Tor Bay. Pop. 4,300.

Brody, a town of Austria, prov. Galicia. Pop. 18,000.

Bromsgrove, a town of England, co. Worcester. Pop. 10,800.

Bruges, a manufacturing city of Belgium, prov. W. Flanders. Pop. 50,000.

Brunswick, a city of N. Germany, cap. of a duchy. Pop. 40,000.

Brusa, a city of Asiatic Turkey, in N. W. part of Asia Minor. Pop. 60,000.

Bucharest, a city of Europ. Turkey, cap. principality of Wallachia. Pop. 65,000.

Buckingham, a town and inland co. of England. The town is on the river Ouse. Pop. 3,800.

Buda, or *Ofen*, a city of Hungary, on the Danube, opposite to Pesth. Pop. 55,000.

Buenos Ayres, a maritime city of S. America, the chief place in the La Plata territory, and on the W. bank of the Rio de la Plata. Pop. 350,000.

Buffalo, a commercial city of New York, U. S., at the E. end of L. Erie. Pop. 84,000.

Bulgaria (*Mæsia Inferior*), a prov. of Europ. Turkey, S. of the Danube.

Burgos, a city and prov. of Spain, within Old Castile. Pop. (of city) 10,000.

Burmah, a kingdom of S. E. Asia. Area, 217,000 sq. m. Pop. 3,000,000. Cap. Amarapoora.

Burnley, a manufacturing town of Lancashire, England. Pop. 28,700.

Burslem, a town of Staffordshire, one of the group known as 'the Potteries.' Pop. 22,300.

Bury, a manufacturing town of Lancashire, England. Pop. 37,500.

Bury St. Edmunds, a town of Suffolk, England, on the river Lark. Pop. 13,300.

Bute, an island of Scotland, forming, with Arran, the co. of Bute.

Cadiz, a maritime city of Spain, prov. Andalusia, on the Atlantic. Pop. 72,000.

Caen, a town of France, dep. Calvados, within former prov. of Normandy. Pop. 40,000.

Cabool, or *Caubul*, a city of Afghanistan, on the Cabool river, an affluent of the Indus. Pop. 60,000.

Caccinathan (*Munich*), a town

Caernarvon (*Segontium*), a town and county of N. Wales. Pop. of town (on river Seiont), 8,510. ●

Caffraria, a country of S. Africa. A portion of it forms a dependency of the British crown, under the title of British Caffraria: cap. King William Town.

Cagliari (*Canalis*), a maritime town of Sardinia, on S. coast of that island. Pop. 31,000.

Cairo, the cap. city of Egypt, on E. bank of river Nile. Pop. 30,000.

Cairuan, an inland city of Tunis, N. Africa. Pop. 50,000.

Caithness, a maritime co. of Scotland, ch. town, Wick.

Calabria, the southernmost portion of the Italian mainland.

Calais, a seaport of N. France, dep. Pas de Calais. Pop. 10,500.

Calcutta, the cap. of Brit. India, prov. Bengal, on E. bank of river Hoogly, the chief arm of the Ganges. Pop. 400,000.

Calicut, a seaport of Brit. India, Madras pres., on the W. or Malabar coast. Pop. 30,000.

California, one of the U. S. of N. America, bordering on

California, Lower, a to the S. of the above, on the W. side of Mexico.

Callao, a seaport of Peru, S. America, on the Pacific Ocean. It forms the port of Lima. Pop. 6,000.

Cambay, a seaport town of India, Guicowar's dominions, at the head of the Gulf of Cambay. Pop. 37,000.

Cambodia, a territory of S. E. Asia, formerly a distinct kingdom, now included within Cochin-China and Siam.

Cambray (*Camaracum*), a town of France, dep. Nord, on the Scheldt. Pop. 18,000.

Cambridge (*Camboricum*), a university town of England, co. of same name, on the river Cam or Granta. Pop. 26,500.

Campbeltown, a seaport town of Argyle-shire, Scotland. Pop. 6,000.

Campeachy, a seaport of Yucatan, Mexico. Pop. 18,000.

Canada, a Brit. colony, N. America, including the chief part of the St. Lawrence valley and the N. shore of the great lakes. Ch. towns, Québec, Montreal, Toronto, and Ottawa. Pop. 2,500,000.

Canary Islands, a group in the N. Atlantic, off W. coast of Africa, belonging to Spain.

Candahar, a city of Afghanistan, the seat of a sovereign principality, or khanat. Pop. 50,000.

Canterbury, an archiepiscopal city of England, co. Kent, on the river

Stour. Pop. 21,300.—A prov. of New Zealand, S. Island, ch. town, Christchurch.

Canton, a city and seaport of China, S. coast. Pop. 1,000,000.

Cape Breton, an island of Brit. N. America, forming part of the colony of Nova Scotia.

Cape Coast Castle, a Brit. fortress on the Gold Coast, W. Africa.

Cape Colony, a country of S. Africa, forming part of the Brit. Empire, deriving its name from the Cape of Good Hope. Area, 200,000 sq. m. Pop. 267,000.

Cape Haytien, a seaport town of Hayti, W. Indies. Pop. 10,000.

Cape Town, the c.p. of the Cape Colony. Pop. 25,000.

Capua, an inland city of S. Italy, on the Volturno river. Pop. 9,000.

Caracas, the cap. of Venezuela, S. America. Pop. 50,000.

Carcassonne, a town of France, dep. Aude, and on the river Aude. Pop. 50,000.

Cardiff, a maritime town of S. Wales, co. Glamorgan, at mouth of river Taff. Pop. 32,900.

Cardigan, a town and county of S. Wales. Pop. of town (on river Teify), 3,500.

Caribbean Sea, an arm of the Atlantic, adjoining N. coast of S. America.

Carlisle, an episcopal city of England, co. Cumberland, on the river Eden. Pop. 29,400.

Carlow, a town and co. of Ireland: prov. Leinster. Pop. (of town) 8,200.

Carlsrona, a seaport and arsenal of Sweden, on the Baltic. Pop. 12,000.

Carlsruhe, the cap. of gr.-duchy of Baden, Germany. Pop. 27,000.

Carolina, North and South, two of the U. S., of N. America.

Carpathian Mountains, a chain in central Europe, on the borders of Hungary and Galicia.

Carrick-on-Shannon, an inland town of Ireland, co. Leitrim. Pop. 1,500.

Carrick-on-Suir, an inland town of Ireland, co. Tipperary. Pop. 4,900.

Carrickfergus, a seaport of Ireland, co. Antrim. Pop. 9,400.

Carthage (*Carthago Nova*), a seaport of Spain, on the Mediterranean coast, prov. Murcia. Pop. 35,000.—A maritime city of New Granada, S. America, on the Caribbean Sea. Pop. 10,000.

Caserta, a town of S. Italy, prov. Terra di Lavoro. Pop. 15,000.

Cashel, an inland city of Ireland, co. Tipperary. Pop. 4,300.

Cashgar, a city of Chinese Tartary Pop. 50,000.

Cashmere, an independent state of N. India. Its cap., Serinuggur, lies within the valley of Cashmere, amongst the highest portions of the Himalaya.

Caspian Sea, a vast salt-water lake on the borders of Europe and Asia.

Castel-a-Mare, a town of S. Italy, on the Bay of Naples. Pop. 19,000.

Catamarca, a town and state of the La Plata territory, S. America.

Catania, a maritime town of Sicily, on the E. coast. Pop. 62,000.

Catanzaro, a town of S. Italy, prov. Calabria Ultra II. Pop. 16,000.

Catmandoo, a town of N. India, cap. of Nepal. Pop. 50,000.

Cattaro, a seaport of the Austrian emp., on the Adriatic, prov. Dalmatia. Pop. 5,000.

Cattegat, a channel forming part of the communication between the North Sea and the Baltic.

Caucasus, a mountain-system on the border of Europe and Asia.

Cauvery, a river of S. India, flowing into the B. of Bengal.

Cavan, a town and co. of Ireland, prov. Ulster. Pop. (of town) 3,100.

Cawnpore, a town and military station of Brit. India, Bengal pres., on the upper Ganges. Pop. 108,000.

Cayenne, an island and town of French Guiana, S. America. Pop. 22,600.

Celebes, an island of the E. Indian Archipelago, belonging to the Dutch. Pop. about 2,000,000.

Cephalonia, one of the Ionian islands.

Ceuta, a fortress and seaport of N. Africa, belonging to Spain, and immediately opposite to Gibraltar.

Ceylon (Taprobane), an island of India, forming a colonial dependency of Britain: cap. Columbo.

Chad, a large lake of Central Africa.

Chagos Islands, a group in the Indian Ocean, S. of the equator.

Chalons-sur-Marne, a town of France, dep. Marne. Pop. 13,000.

Chalons-sur-Saône, a town of France, dep. Saône et Loire. Pop. 16,000.

Chambery, a town of France, dep. Savoie. Pop. 17,800.

Champlain, a lake of N. America, belonging to the St. Lawrence basin.

Charleston, a maritime city of S. Carolina, U. S., on the Atlantic coast, at the outlet of the Ashley and Cooper rivers.

Chatham, a port and naval arsenal of England, co. Kent. Pop. 36,000.

Cheltenham, an inland watering-place of England, co. Gloucester. Pop. 39,700.

Chesapeake Bay, an estuary of the Atlantic, E. coast of U. S., North America.

Chester, a cathedral city of England, on the river Dee, and the capital of a county. Pop. 31,000.

Chesterfield, a town of England, co. Derby. Pop. 9,800.

Cheviot Hills, a range on the border of England and Scotland.

Chicago, a city of Illinois, U. S., at the S. extremity of lake Michigan. Pop. 110,000.

Chile, a country of S. America, cap. Santiago.

Chiltern Hills, a chalk range in Buckinghamshire and Oxfordshire, England.

Chimborazo, a mountain in S. America, near the equator, and belonging to the Andes: 21,415 ft. high.

China, a large country of Eastern Asia. Area, 1,300,000 sq. m. Pop. 412,000,000. Cap. Peking.

Chorley, a manufacturing town of Lancashire, England. Pop. 15,000.

Christiania, the cap. of Norway, situated at the head of Christiania Fiord. Pop. 40,000.

Christiansand, a seaport of Norway, on the Skager-rack. Pop. 9,500.

Chiguisaca, the cap. of Bolivia, S. America. Pop. 12,000.

Chusan, an island off the E. coast of China.

Cincinnati, a city of Ohio, U. S., on N. bank of river Ohio. Pop. 160,000.

Circassia, a border country of Europe and Asia, occupying part of the western Caucasus.

Civita Vecchia, a seaport town of W. Italy, within the Papal territory. Pop. 10,000.

Clermont-Ferrand, a city of France, dep. Puy de Dôme. Pop. 26,700.

Clifton, a suburb of Bristol, England, co. Gloucester.

Clitheroe, a manufacturing town of Lancashire, England. Pop. 7,000.

Clonmel, a town of Ireland, co. Tipperary. Pop. 11,100.

Clyde, a river of Scotland, falling into the Firth of Clyde, an arm of the Atlantic.

Coblentz, a fortified town of Prussia, on the river Rhine. Pop. 28,500.

Coburg, an inland city of Germany, cap. Duchy Saxe-Coburg-Gotha. Pop. 10,700.

Cochin-China, a country of S. E. Asia, forming part of emp. of Anam.

Cockermouth, a town of England, co. Cumberland, at junction of rivers Cocker and Derwent. Pop. 7,000.

Cognac, a town of France, dep. Charente. Pop. 4,100.

Colne, a manufacturing town of Lancashire. Pop. 6,300.

Cologne, Germ., *Köln* (*Colonia Agrippina*), a city of Prussia, on left bank of river Rhine. Pop. 120,000.

Colombo, a maritime city, the cap. of Ceylon. Pop. 35,000.

Columbia, a district of the United States, within which Washington is situated.—A river of N. America, flowing from the Rocky Mountains into the Pacific Ocean.

Como, a city of N. Italy, at foot of lake called by its name. Pop. 18,000.

Comoro Islands, a group in the Indian Ocean, between Madagascar and the African mainland.

Conception, a maritime city of Chili, S. America. Pop. 10,000.

Congo, a country of W. Africa, S. of the equator.—A river of the same region.

Connecticut, one of the U. S. of N. America, forming part of New England.

Constance, a city of grand-duchy of Baden, on the lake of Constance. Pop. 7,000.

Constantine (*Cirta*), an inland town of Algeria, N. Africa, on river Rummel.

Constantinople, the cap. of the Turkish empire, on the Bosphorus. Pop. 500,000.

Copenhagen, the cap. of Denmark, on the I. of Zealand. Pop. 155,000.

Cordova (*Corduba*), a city of Andalusia, Spain, on the river Guadalquivir. Pop. 42,000.

Corea, a peninsula of E. Asia. It forms a native kingdom, dependent on China. Cap. King-ki-tao.

Corfu, the northernmost of the Ionian Is. The town of Corfu, a strong fortress, has 17,000 inh.

Corinth (*Corinthus*), a famous city of Greece, in the N. E. of the Morea, near the isthmus to which it gives name; now a mere village.

Cork, a maritime city and county of Ireland, prov. Munster. The former, on the river Lee, has 79,000 inh.

Cornwall, the S. W. co. of England.

Corrib, lough, a large lake of Ireland, co. Galway.

Corsica, an island of the Mediterranean, belonging to France.

Corunna, a maritime city of Galicia, Spain. Pop. 20,000.

Costa Rica, a republic of Central America. Cap. San José.

Cotopaxi, a volcano of S. America, belonging to the Andes.

Cotswold Hills, a range extending N. and S. through Gloucestershire, England.

Courtray, a town of Belgium, prov. W. Flanders. Pop. 20,000.

Cracow, a city of Austrian Poland, on river Vistula. Pop. 43,000.

Crefeld, a manufacturing town of Prussia, Rhine prov. Pop. 15,000.

Cremona, a city of N. Italy, on the river Po. Pop. 28,000.

Crimea, a peninsula of S. Russia, joined to the European mainland by the isthmus of Perekop.

Croatia, a country of S. Europe, partly belonging to Turkey, but chiefly within the Austrian empire.

Cronstadt, a town and fortress of Russia, on an island in the G. of Finland. Pop. 45,000.—Also, a town of Transylvania, Austrian empire. Pop. 35,000.

Cuba, the largest of the W. India islands. It belongs to Spain. Pop. 1,500,000. Cap. Havana.

Cumaná, a maritime city of Venezuela, S. America. Pop. 12,000.

Cumberland, a maritime county of England.

Cupar, a town of Fifeshire, Scotland. Pop. 5,000.

Cupar-Angus, a town of Scotland, on the borders of Forfar and Perth. Pop. 1,900.

Cutch, a dependent state of India. Pop. 500,000. Ch. town Bhooj.

Cuttack, a town and district of Brit. India, Bengal pres., at the mouth of the Mahanuddy river.

Cuzco, an inland city of Peru, S. America. Pop. 40,000.

Cyprus, a large island in the Mediterranean, belonging to Turkey. Pop. 100,000.

Dacca, a city of Brit. India, prov. Bengal. Pop. 70,000.

Daghestan, a border country of Europe and Asia, embracing part of the Caucasus region.

Dahomey, a negro kingdom of W. Africa, Guinea coast. Cap. Abomey.

Dalmatia, a maritime prov. of Austrian empire, bordering on the Adriatic.

Damascus, an inland city of Syria, on the river Barada. Pop. 120,000.

Damiatta, a seaport of Egypt, on the E. arm of the Nile. Pop. 28,000.

Dantzic, or **Danzig**, a seaport of Prussia, on one of the arms of the river Vistula. Pop. 83,000.

Danube, a river of central Europe, flowing through Germany, Hungary, and Turkey into the Black Sea.

Dardanelles (*Hellespontus*), a strait dividing Europe and Asia, and uniting the Black Sea with the S. of Marmora.

Darlington, an inland town of Durham. Pop. 15,800.

Darmstadt, an inland town of Germany, cap. of the grand-duchy of Hesse-Darmstadt. Pop. 32,000.

Dartford, a town of Kent, on river Darent. Pop. 5,300.

Dartmouth, a seaport of Devonshire, at mouth of river Dart. Pop. 4,400.

David's, St., an episcopal city of Pembrokehire, Wales. Pop. 2,200.

Davis Strait, the channel leading to Baffin Bay, N. Atlantic.

Dead Sea, a salt lake of Syria, into which the river Jordan flows.

Deal, a seaport of Kent. Pop. 7,500.

Debreczin, a city of Hungary. Pop. 36,000.

Deccan, the interior of southern or peninsular India.

Dee, a river of N. Wales.—Also, two rivers of Scotland.

Delaware, one of the U. S. of N. America.

Delft, a town of S. Holland, famous for its earthenware. Pop. 17,000.

Delhi, a city of Brit. India, N. W. prov. of Bengal pres., on the river Jumna. Pop. 200,000.

Demerara, a river of Brit. Guiana, S. America.

Denbigh, a town and county of N. Wales. Pop. (of town) 59,000.

Denmark, a kingdom of Europe; cap. Copenhagen.

Deptford, a town of Kent, forming a S. E. suburb of London.

Derby, a town and inland county of England. Pop. of town (on river Derwent) 43,000.

Derwent, the name of several rivers in England.

Derwent Water, a lake of Cumberland, England.

Detroit, a city of Michigan, U. S., N. America. Pop. 46,800.

Deuz-Ponts, Germ. *Zwei-brücken*, a town of Bavaria, W. of the Rhine. Pop. 8,000.

Devizes, a town of Wiltshire. Pop. 6,600.

Devonport, a seaport and arsenal of Devonshire, adjoining Plymouth. Pop. 64,700.

Devonshire, a maritime county of England.

Dewsbury, a manufacturing town of Yorkshire, W. Riding. Pop. 18,000.

Diarbekir, a city of Turkey in Asia, on the Tigris. Pop. 15,000.

Dieppe, a seaport of France, dep. Seine Inf. Pop. 16,000.

Dizfool, an inland city of Persia, prov. Khuzistan. Pop. 15,000.

Dnieper, a river of Europe, flowing through Russia into the Black Sea.

Dniester, a river of Europe, flowing through Austrian Poland and Russia into the Black Sea.

Dominica, an island of the Brit. W. Indies.

Don, a river of Europe, flowing through Russia into the S. of Azov.

Donaghadee, a seaport of Ireland, co. Down. Pop. 2,600.

Doncaster, a town of Yorkshire, W. Riding, on river Don. Pop. 16,000.

Donegal, a maritime co. of Ireland, prov. Ulster.

Dongola, New, a town of Nubia, river Nile.

Dorchester, a town of Dorsetshire, on river Frome. Pop. 6,800.—A town of Massachusetts, U. S.

Dorking, a town of England, co. Surrey, on the river Mole. Pop. 4,000.

Dorpat, a town of European Russia, gov. Livonia. Pop. 6,000.

Dorsetshire, a maritime county of England.

Dort, or *Dordrecht*, a town of S. Holland, on the Meuse. Pop. 20,000.

Douay, a town of France, dep. Nord. Pop. 17,000.

Douglas, a seaport town, I. of Man. Pop. 9,800.

Douro, a river of Europe, flowing through Spain and Portugal into the Atlantic.

Dover (Dubris), a seaport of Kent, England. Pop. 25,000.

Dovre Field, a mountain tract of Norway, part of the great Scandinavian chain.

Down, a maritime co. of Ireland, prov. Ulster.

Downpatrick, a seaport of Ireland, co. Down. Pop. 3,680.

Dresden, an inland city of Germany, cap. Saxony, on the river Elbe. Pop. 128,000.

Drogheda, a town of Ireland, co. Louth, on the river Boyne. Pop. 14,700.

Droitwich, a town of Worcestershire, noted for its salt springs. Pop. 3,000.

Dronthim, or *Trondhiem*, a cathedral city of Norway. Pop. 16,000.

Dublin (Eblana), a city and co. of Ireland, prov. Leinster. The city, which forms the cap. of the island, stands on the Liffey. Pop. 296,000.

Dudley, a manufacturing town of Worcestershire. Pop. 45,000.

land. The town, on river Nith, has 14,000 inh.

Dundalk, a seaport of Ireland, co. Louth. Pop. 10,000.

Dundee, a maritime town of Forfarshire, Scotland. Pop. 90,000.

Dunkirk, a seaport of France, dep. Nord. Pop. 25,000.

Dunstable, a town of Bedfordshire. Pop. 4,470.

Durham, an episcopal city and co. of England. The city, on river Wear, has 13,700 inh.

Dusseldorf, an inland city of Prussia, Rhine prov. Pop. 41,000.

Dvina, two rivers of Europe, one flowing into the Baltic, the other into the White Sea.

Dysart, a town of Fifehire, Scotland, Pop. 8,000.

Ecija, an inland city of Andalusia, Spain. Pop. 24,000.

Ecuador, a republic of S. America, cap. Quito.

Edinburgh, a city and co. of Scotland. The city, which is the metropolis of Scotland, stands near the S. shore of the Firth of Forth. Pop. 168,000.

Egypt, a country of Africa, ch. town Cairo.

Eisenach, a town of Germany, duchy of Saxe-Weimar. Pop. 9,000.

Ekaterrinburg, a town of European Russia, gov. Perm. Pop. 15,000.

Elba (Lat. *Ilva*; Gr. *Æthalia*), an Italian island in the Mediterranean, near the coast of Tuscany.

Elberfeld, a manufacturing town of Prussia, Rhine prov. Pop. 56,300.

Elbeuf, a manufacturing town of France, dep. Seine Inf. Pop. 16,000.

Elburz, the highest mountain in the chain of Caucasus.

Elephanta, a small island near Bombay, India, celebrated for its cave-temples and works of ancient art.

Elgin, or *Moray*, a county of Scotland.

Ellora, a village of India, Nizam's dominions, near Aurungabad, with extensive cave-temples.

Elsinore, a maritime town of Denmark, on the Sound, N. of Copenhagen. Pop. 8,000.

Elvas, a fortified town of Portugal, prov. Alemtejo, near the Spanish frontier. Pop. 11,000.

Ely, an episcopal city of Cambridge-shire. Pop. 7,400.

Embsen, a seaport town of Hanover, Germany, at mouth of river Ems. Pop. 15,000.

England, the S. division of the island

Enniscorthy, a town of Ireland, co. Wexford. Pop. 5,300.

Enniskillen, a town of Ireland, co. Fermanagh, on the river Erne. Pop. 5,600.

Eperics, a town of Hungary. Pop. 8,600.

Epsom, a town of Surrey. Pop. 4,890.

Erfurth, a manufacturing town of Prussian Saxony. Pop. 37,000.

Erie, Lake, one of the great chain of lakes belonging to the basin of the St. Lawrence, N. America.

Erivan, a town of Russian Armenia, near Mount Ararat. Pop. 11,500.

Erlau, a town of Hungary. Pop. 20,000.

Erne, a river and lake of Ireland.

Erzeroum, an inland city of Asia, the cap. of Turkish Armenia. Pop. 50,000.

Escorial, a town and royal palace of Spain, lying N. W. of Madrid.

Essequibo, a river of Brit. Guiana, S. America.

Essex, a maritime county of England.

Estremadura, an inland prov. of Spain. —A prov. of Portugal.

Eszck, a town of Austria, prov. Slavonia, on the river Drave. Pop. 12,000.

Etienne, St., a manufacturing town of France, dep. Loire. Pop. 94,000.

Etna, a volcano of Sicily, 10,874 ft. high.

Euphrates, a river of Western Asia, flowing into the Persian Gulf.

Europe, one of the great divisions of the globe.

Everest, Mount, the highest summit of the Himalaya chain, Asia, and the highest known point on the globe: 29,000 ft. high.

Evesham, a town of Worcestershire, on river Avon. Pop. 4,680.

Evora (Ebora), a fortified town of Portugal, prov. Alemtejo. Pop. 9,300.

Evreux (Mediolanum, aft. Eburovices), a city of France, dep. Eure. Pop. 13,000.

Exeter (Isca Damnoniorum), an episcopal city of Devonshire, on river Exe. Pop. 33,700.

Fahlun, a mining town of Sweden. Pop. 4,500.

Falaise, a town of France, dep. Calvados. Pop. 8,600.

Falkirk, a town of Scotland, co. Stirling. Pop. 3,000.

Falkland Islands, a group in the S. Atlantic Ocean, belonging to Britain.

Falmouth, a seaport town of Cornwall, England. Pop. 5,700.

Faroe Islands, a group in the N. Atlantic Ocean, belonging to Denmark.

Feejee Islands, an extensive group in the S. Pacific Ocean.

Fermanagh, an inland county of Ireland, prov. Ulster.

Fernando Po, an island in the Gulf of Guinea, belonging to Spain.

Ferrara, (*Forum Allieni*), a city of Italy, near lower course of river Po. Pop. 26,000.

Ferrol, a seaport of Galicia, Spain, near Corunna. Pop. 16,000.

Fez, an inland city of Morocco, N. Africa. Pop. 90,000.

Fezzan, an inland country of N. Africa, cap. Mourzook.

Fife, a maritime county of Eastern Scotland.

Finisterre, a cape in the N. W. of Spain.

Finland, a country forming the N. W. portion of Russia in Europe: cap. Helsingfors.

Fiume, a seaport of Austria, at the head of a gulf of the Adriatic. Pop. 11,000.

Flanders, *East* and *West*, two contiguous provinces of Belgium.

Florence: Ital. *Firenze* (*Florentia*), a city of Italy, on the river Arno. Pop. 115,000.

Florida, a peninsula of N. America.—Also, one of the southern states of the N. American Union.

Flushing, a seaport of the Netherlands, prov. Zeeland, on the island of Walcheren. Pop. 8,000.

Folkestone, a maritime town of Kent. Pop. 8,500.

Fontainebleau, an inland town of France, dep. Seine et Marne. Pop. 7,800.

Forfar, a town and co. of Scotland. The town has 9,200 inh.

Formosa, an island off the E. coast of China. The chief town is Taewan.

Forth, a river of Scotland, flowing into the North Sea.

Foyle, a river of Ireland, flowing into Lough Foyle.

France, a country of Europe. Cap. Paris.

Francisco, San, a seaport of California, U. S., on a bay of the Pacific. Pop. 66,000.

Frankfort-on-the-Main, an inland city and municipal state of Germany, with 83,000 inh.

Frankfort-on-the-Oder, a city of Prussian Germany, prov. Brandenburg. Pop. 36,500.

Fraser, a river of Brit. Columbia, N. America, flowing into the Pacific.

Fredericton, the cap. town of New Brunswick, on the river St. John. Pop. 7,000.

Freyburg, a town of S. W. Germany, grand-duchy BadCo. Pop. 17,000.

Fribourg, a town and canton of Switzerland. The town, on the river Sarine, has 9,100 inh.

Friendly Islands, a group in the S. Pacific Ocean.

Friesland, a prov. of the Netherlands, bordering on the Zuyder Zee and the German Ocean.

Fulda, an inland town of Germany, elec. of Hesse-Cassel. Pop. 9,300.

Fundy, Bay of, an arm of the Atlantic Ocean, on the coast of N. America.

Funen, a Danish island, at the entrance of the Baltic.

Fünfkirchen, a town of Hungary. Pop. 14,500.

Furth, a manufacturing town of Germany, kingdom Bavaria. Pop. 16,000.

Gaeta (*Caleta*), a seaport town of Italy, W. coast. Pop. 14,800.

Gainsborough, a town of Lincolnshire, on the Trent. Pop. 6,300.

Galapagos Islands, a group in the Pacific Ocean, W. of S. America.

Galashiel, a town of Selkirkshire, Scotland. Pop. 5,400.

Galatz, a town of European Turkey, princip. Moldavia, on the Danube. Pop. 36,000.

Galicia, a prov. of Austrian empire; cap. Lemberg.—Also, one of the older prov. of Spain; cap. St. Iago.

Gall, St., a town and canton of Switzerland. Pop. (of town) 11,000.

Gallipoli (*Callipolis*), a seaport of European Turkey, on the Dardanelles. Pop. 17,000.

Galveston, a seaport of Texas, U. S. Pop. 2,500.

Galway, a city and co. of Ireland, prov. Connaught. Pop. 16,700.

Gambia, a river of W. Africa, flowing into the Atlantic.

Ganges, a river of India, flowing into the Bay of Bengal.

Garda, a lake of N. Italy.

Garonne, a river of France, flowing into the Bay of Biscay.

Gateshead, a town of England, co. Durham, adjoining Newcastle-upon-Tyne. Pop. 33,500.

Gaza, a town of Syria. Pop. 15,000.

Geelong, a town of Victoria, Australia, on an arm of Port Philip. Pop. 8,000.

Geneva, a city, canton, and lake of Switzerland. The city, on river Rhone, at its outlet from the lake, has 41,000 inh.

Genoa (*Genua*), a maritime city of Italy. Pop. 120,000.

Georgetown, the cap. of Brit. Guiana.

ing part of the Transcaucasian territory of Russia; cap. Tiflis.—Also, one of the southern states of the N. American Union.

Germany, a country of central Europe.

Ghauts, a chain of mountains on the W. coast of India.

Ghent, a manufacturing city of Belgium. Pop. 118,000.

Ghiznee, a fortified city of Afghanistan, once the cap. of an extensive empire.

Gibraltar, a rock and fortified town at the S. extremity of Spain, belonging to Britain. Pop. 13,000.

Giessen, an inland town of Germany, gr. d. of Hesse-Darmstadt. Pop. 7,300.

Gilolo, an island in the E. Indies, one of the Moluccas group.

Girgenti (*Agrigentum*), a city of Sicily. Pop. 17,000.

Glamorgan, a county of S. Wales.

Glarus, a town and canton of Switzerland. Pop. (of town) 4,700.

Glasgow, a manufacturing and commercial city of Scotland, co. Lanark, on riv. Clyde. Pop. 395,000.

Glastonbury, a town of Somersetshire. Pop. 3,500.

Glatz, a town of Prussian Germany, prov. Silesia. Pop. 9,800.

Glogau, a town of Prussian Germany, prov. Silesia. Pop. 15,000.

Glossop, a manufacturing town of Derbyshire. Pop. 19,000.

Gloucester, a city and co. of England. The city, on river Severn, has 16,300 inh.

Goa, a decayed city of India, belonging to Portugal.

Gobi, or *Shamo*, a vast desert of central Asia.

Godavery, a river of India, flowing into the B. of Bengal.

Gold Coast, a portion of W. Africa, bordering on the G. of Guinea.

Gombroon, or *Bander-Abassi*, a seaport of Persia, on the Persian Gulf. Pop. 4,800.

Gondar, a city of Abyssinia. Pop. 6,000.

Good Hope, Cape of, a promontory of S. Africa, within the Cape Colony.

Gorce, an island off the W. coast of Africa, belonging to France.

Gorlitz, a town of Prussian Germany, prov. Silesia. Pop. 18,000.

Gosport, a seaport town of Hampshire. Pop. 7,800.

Gotha, a city of Germany, grand-duchy of Saxe-Coburg-Gotha. Pop. 16,600.

Gothenburg, a maritime city of Sweden, at mouth of river Göta. Pop. 34,000.

Granada, a city of Spain, prov. Andalusia. Pop. 100,000.

Gratz, a city of Austrian Germany, prov. Styria, on the river Mur. Pop. 63,000.

Gravesend, a town of Kent, on the river Thames. Pop. 18,700.

Great Salt Lake, a large lake in N. America, W. of the Rocky Mountains. Great Salt Lake City is on its shores.

Greece, a kingdom of Europe, cap. Athens.

Greenland, an insular portion of N. America, lying E. of Baffin Bay.

Greenock, a seaport town of Scotland, co. Renfrew, on the river Clyde. Pop. 42,000.

Greenwich, a town of Kent, forming a suburb of the metropolis. Pop. 40,000.

Grenada, an island of the W. Indies, belonging to Britain.

Grenoble (*Gratianopolis*), a town of France, dep. Isère. Pop. 33,000.

Grimsby, Great, a seaport town of Lincolnshire. Pop. 11,000.

Grodno, a town and gov. of European Russia. Pop. (of town) 16,000.

Groningen, a city and prov. of the Netherlands. Pop. of former, 33,000.

Guadalaxara, a town of New Castile, Spain. Pop. 7,000.—Also a town and prov. of Mexico.

Guadaloupe, an island of the W. Indies, belonging to France.

Guadalquivir (*Bætis*), a river of Spain, flowing into the Atlantic Ocean.

Guadiana (*Anas*), a river of Spain, flowing into the Atlantic Ocean.

Guatemala, a country of Central America. Its cap. is the city of New Guatemala, with 60,000 inh.

Guayaquil, a seaport of Ecuador, S. America. Pop. 20,000.

Guernsey, one of the Channel Islands.

Guiana, a country of S. America, divided between Britain, Holland, and France.

Guildford, a town of Surrey, on river Wey. Pop. 8,000.

Guinea, a region of W. Africa, adjoining the gulf of same name.

Gwalior, a fortified town of India, cap. of dependent state of that name. Pop. 50,000.

Haarlem, a city of the Netherlands, prov. N. Holland. Pop. 28,000.

Haddington, a town and co. of Scotland. Pop. (of town) 3,500.

Hague, The, a town of S. Holland, the political capital of the Netherlands. Pop. 81,000.

Hainan, an island off the S. coast of

Halberstadt, a town of Prussian Germany, prov. Saxony. Pop. 20,000.

Halifax, a manufacturing town of England, W. Riding of Yorkshire. Pop. 37,000. — A seaport of Nova Scotia, the cap. of that province. Pop. 25,000.

Halle, a town of Prussian Germany, prov. Saxony. Pop. 33,000.

Hamadan (*Ecbatana*), an inland city of Persia, prov. Irak. Pop. 30,000.

Hamah (*Epiphania*), an inland city of Syria, on river Orontes. Pop. 30,000.

Hamburg, a commercial city and free municipal state of Germany, on river Elbe. Pop. 175,000.

Hammerfest, a seaport of Norway, and the most northerly town in Europe.

Hampshire, a maritime county of England.

Hanau, an inland town of Germany, elect. Hesse-Cassel. Pop. 15,000.

Han-kow, an inland city of China, on the Yang-tsze-kiang.

Hanover, a kingdom of N. Germany, one of the members of the Germanic Confederation. Cap. Hanover.

Harfleur, a seaport of France, dep. Seine Inférieure, and at mouth of river Seine. Pop. 1,600.

Harrowgate, an inland watering place of Yorkshire, W. Riding. Pop. 4,700.

Hartford, a city of Connecticut, U. S. Pop. 18,000.

Hartlepool, a seaport town of Durham. Pop. 12,600.

Harz Mountains, a range in N. Germany, on the borders of Prussia and Hanover.

Harwich, a seaport town of Essex. Pop. 5,000.

Hastings, a seaport town of Sussex. Pop. 23,000.

Havannah, the cap. city of Cuba, W. Indies. Pop. 200,000.

Havre, Le, a seaport town of France, dep. Seine Inf., and at mouth of river Seine. Pop. 74,000.

Hawick, a town of Scotland, co. Roxburgh. Pop. 8,200.

Hayti, or *St. Domingo*, a large island of the W. Indies. Its western part forms the Republic of Hayti (cap. Port au Prince). Its eastern half belongs to Spain.

Hebrides, or *Western Islands*, a numerous chain lying off the W. coast of Scotland.

Hebrides, New, a chain of islands in the S. Pacific Ocean.

Heidelberg, a city of Germany, gr. duchy Baden, on the river Neckar. Pop. 12,000.

Helena, St., a British island in the S.

Helens, St., a manufacturing town of Lancashire. Pop. 18,000.

Heligoland, an island in the North Sea, belonging to Britain.

Helsingfors, a maritime city of Russia, the cap. of Finland. Pop. 16,000.

Herat, a city of Afghanistan. Pop. 50,000.

Hereford, a town and co. of England. The town, on river Wye, has 15,600 inh.

Hertford, a town and co. of England. The town, on river Lea, has 6,700 inh.

Hessen-Cassel, an electorate of Germany. Cap. Cassel.

Hessen-Darmstadt, a grand-duchy of Germany. Cap. Darmstadt.

Hexham, a town of Northumberland. Pop. 4,600.

Himalaya Mountains, a range lying N. of India, and the highest on the globe. Their culminating point is Mount Everest.

Hindoostan, or *India*, a vast country of S. Asia, chiefly under British rule.

Hitchin, a town of Hertfordshire. Pop. 6,300.

Holstein, a country of N. Germany, included within the kingdom of Denmark.

Holyhead, a seaport town of Anglesey, N. Wales. Pop. 6,200.

Holywell, a town of Flintshire, N. Wales. Pop. 5,300.

Honduras, a country of Central America. Cap. Comayagua.

Honduras, British, or *Belize*, a prov. on the east coast of Central America. Cap. Belize.

Hong-kong, a small island off the S. coast of China, belonging to Britain.

Hoorn, or *Hoorn*, a maritime town of the Netherlands, prov. N. Holland. Pop. 8,200.

Horn, Cape, the S. extremity of the New World.

Huddersfield, a manufacturing town of England, W. Riding, Yorkshire. Pop. 34,800.

Hudson, a river and town of the U. S., N. America. — Also, a bay and strait of N. America.

Hull, or *Kingston-upon-Hull*, a seaport town of England, E. Riding, Yorkshire. Pop. 99,000.

Humber, a river of England, forming an estuary of the German Ocean.

Hungary, a country of Central Europe, forming part of the Austrian empire. Cap. Pesth.

Huntingdon, a town and co. of England. The town, on river Ouse, has 3,800 inh.

Huron, a lake of N. America, belonging to the St. Lawrence basin.

Pop. 200,000.—Also, a city of Brit. India., prov. Sind. *Pop.* 24,000.

Iantun, a town of Albania, European Turkey. *Pop.* 10,000.

Iceland, a large island of N. W. Europe, belonging to Denmark; celebrated for its volcanic phenomena.

Illinois, one of the U. S. of N. America.

Imola, a town of S. Italy. *Pop.* 8,000.

Indiana, one of the U. S. of N. America.

Indore, an inland city of India, cap. of a dependent state of same name. *Pop.* 15,000.

Indus, a river of S. Asia, flowing into the Indian Ocean.

Ingolstadt, a fortified town of Bavaria. *Pop.* 9,200.

Innsbruck, a city of Austria, prov. Tyrol, on the river Inn. *Pop.* 13,000.

Inverness, a city and co. of Scotland. The city, at mouth of river Ness, has 12,500 inh.

Iona, or *Icolmkill*, an island of the Hebrides, off the W. coast of Scotland, famous for its ancient monasteries.

Ionian Islands, a chain lying off the W. coast of Greece.

Iowa, one of the U. S. of N. America.

Ipswich, the co. town of Suffolk, on river Orwell. *Pop.* 38,000.

Ireland, one of the group of the Brit. Islands, lying W. of Great Britain.

Irkutsk, a city of Siberia, on river Angara. *Pop.* 20,000.

Irrawady, a river of S. Asia, flowing through Burmah and Pegu into the Gulf of Martaban.

Irish, a river of Siberia; it is an affluent of the Obi.

Irwell, a river of Lancashire, England, upon which Manchester stands; it is an affluent of the Mersey.

Ismail, a fortified town on the Danube, within Moldavia. *Pop.* 22,000.

Ismid (*Nicomedia*), a decayed town of Anatolia, Turkey-in-Asia.

Isnik (*Nicæa*), a decayed town of Anatolia, Turkey-in-Asia, famous in ecclesiastical history.

Ispahan, an inland city of Persia, with 100,000 inh.

Italy, a country of S. Europe.

Ithaca, one of the Ionian Islands.

Ives, St., a town of Cornwall. *Pop.* 7000.—Also, a town of Huntingdonshire. *Pop.* 3,300.

Iviza, one of the Balearic Islands, Mediterranean Sea.

Ivrea, a town of Piedmont, Italy, with 8,500 inh.

Jaffa (*Joppa*), a seaport of Syria. *Pop.* 5,000. It is the port of Jerusalem.

Jamaica, the largest island of the Brit. W. Indies. Cap. Spanish Town.

Japan, an insular empire of Asia. Cap. Jedo.

Java, a large island of the E. Indies, belonging to the Dutch. Cap. Batavia.

Jedo, the cap. city of Japan, on island of Nippon. *Pop.* 1,000,000.

Jersey (*Cæsarea*), the largest of the Channel Islands, in the Eng. Channel.

Jersey City, a city of the U. S., N. America, in New Jersey. *Pop.* 59,000.

Jerusalem, the chief city of Palestine, Turkey-in-Asia. *Pop.* 11,500.

Jesso, the most northwardly island of Japan.

John, St., a city of New Brunswick, N. America, at mouth of river St. John. *Pop.* 15,000.—The cap. of Newfoundland. *Pop.* 20,000.—One of the Virgin Is., W. Indies, belonging to Denmark.

Jordan, a river of Palestine, Turkey in Asia, flowing into the Dead Sea.

Jorullo, a volcano of Mexico.

José, San, a city of Central America, cap. republic of Costa Rica. *Pop.* 10,000.

Juan, San, a river of Central America, flowing into the Caribbean Sea.

Juan Fernandez, an island in the Pacific Ocean, off W. coast of Chili.

Juggernaut, or *Pooree*, a town of Brit. India, dist. Cuttack, at mouth of Mahanuddy river. *Pop.* 30,000.

Jumna, a river of India, an affluent of the Ganges.

Jura, a chain of mountains on the border of France and Switzerland.

Jutland, the peninsular portion of Denmark.

Kaffa, a seaport town of the Crimea, Russia-in-Europe. *Pop.* 7,000.

Kalouga, a town of European Russia, on river Oka. *Pop.* 50,000.

Kamschatka, a peninsula of E. Asia.

Kansas, one of the U. S. of N. America.—Also, a river of N. America, an affluent of the Mississippi.

Kars, a fortified town of Turkish Armenia, with 12,000 inh.

Kasan, a city of European Russia. *Pop.* 58,000.

Keighley, a manufacturing town of Yorkshire, W. Riding. *Pop.* 15,000.

Kelat, the chief city of Beloochistan, Asia.

Kelso, a town of Scotland, co. Roxburgh, on the river Tweed. *Pop.* 4,300.

Kendal, a town of Westmoreland, on river Kent. *Pop.* 12,000.

Kent, a river of England, flowing into the English Channel.

Kerman, a city and prov. of Persia.

Kerry, a maritime co. of Ireland.

Kertsch, a seaport town of the Crimea, European Russia.

Keswick, a town of Cumberland, in centre of lake district. Pop. 2,600.

Kharkov, a town of European Russia. Pop. 45,000.

Khartoom, a town of Nubia, on the Blue Nile, immediately above the junction of the White Nile.

Kherson, a city of European Russia, on river Dnieper, with 30,000 inh.

Khiva, a town of Independent Turkestan, Asia, the cap. of a khanat.

Khojend, a town of Independent Turkestan, khanat of Khokan.

Khokan, a town of Independent Turkestan, cap. of a khanat.

Khoten, a town of Chinese Turkestan.

Kiakhta, a town of Siberia, on the frontier of Chinese empire. Pop. 5,000.

Kidderminster, a manufacturing town of Worcestershire, on river Stour. Pop. 15,400.

Kiel, a maritime city of Holstein, Denmark. Pop. 15,000.

Kiev, a city of European Russia, on river Dnieper, with 60,000 inh.

Kildare, an inland town and co. of Ireland.

Kilkenny, an inland town and co. of Ireland. The town, on river Nore, has 17,400 inh.

Killarney, a town of Ireland, co. Kerry, adjacent to the lakes of that name.

Kilmarnock, a manufacturing town of Ayrshire, Scotland. Pop. 22,600.

Kincardine, a maritime co. of Scotland.

King George Sound, an inlet of Western Australia.

King's County, an inland co. of Ireland, prov. Leinster.

Kingston, a town of England, co. Surrey, on river Thames. Pop. 9,800.—A town of Upper Canada, at foot of L. Ontario. Pop. 12,000.—A maritime town of Jamaica, W. Indies. Pop. 35,000.

Kingstown, a seaport of Ireland, co. Dublin, with 11,800 inh.

Kinross, a town and co. of Scotland. The town, on L. Leven, has 2,000 inh.

Kinsale, a seaport town of Ireland, co. Cork. Pop. 4,000.

Kirkcudbright, a town and maritime co. of Scotland. Pop. of town, on river Dee, 2,500.

Kirkwall, a seaport town of Scotland, Orkney Is. Pop. 3,500.

Klagenfurth, an inland city of Austria, prov. Carinthia. Pop. 15,000.

Knaresborough, a town of Yorkshire, West Riding. Pop. 5,400.

Koethen, an inland town of Germany, duchy of Anhalt. Pop. 8,500.

Kolapore, a town of India, cap. of a dependent state of same name.

Koniyeh (Iconium), an inland city of Asiatic Turkey, penins. Asia Minor. Pop. 30,000.

Königsberg, a commercial city of Prussia, at mouth of river Pregel. Pop. 95,000.

Koondooz, a khanat of Independent Turkestan, Asia.

Koordistan, a country of W. Asia, on borders of Turkey and Persia.

Kordofan, a country of Central Africa, N. of Upper Nubia. Cap. El-Obeid.

Kostroma, a town of European Russia, on river Volga, with 10,000 inh.

Kouban, a river of European Russia, flowing into the Black Sea.

Krishna, a river of India, flowing into the B. of Bengal.

Kurile Islands, a volcanic chain in E. of Asia, extending from Kamschatka to Jesso.

Labrador, a country of Brit. N. America, E. of Hudson Bay.

Labuan, a small island off the N. coast of Borneo, E. Indies, belonging to Britain.

Laccadive Islands, a group in the Indian Ocean, W. of the Malabar coast.

Ladoga, a lake of European Russia.

Ladrone, or Marianne Islands, in the N. Pacific Ocean, E. of Asia, and belonging to Spain.

La Guayra, a seaport of Venezuela, S. America, with 4,000 inh.

La Hague, a cape on the N. coast of France, dep. Manche.

La Hogue, a fort and bay of France, dep. Manche, to the S. E. of Cherbourg, famous for the naval battle of 1692.

Lahore, a city of Brit. India, prov. Punjab. Pop. 120,000.

Lanark, a town and co. of Scotland. The town, on river Clyde, has 5,000 inh.

Lancaster, a town and co. of England. The town, on river Lune, has 14,500 inh.

Landau, a fortified town of Bavaria. Pop. 6,000.

La Paz, a city of Bolivia, S. America. Pop. 45,000.

Lapland, a country of N. Europe, divided between the Russian and Swedish dominions.

Larissa, or Yeni-shehr (Larissa), a town of European Turkey, prov. Thessaly. Pop. 20,000.

La Rochelle, a seaport of France, dep.

Lassa, the cap. city of Tibet, Asia. Pop. 50,000.

Launceston, an inland town of Cornwall, England. Pop. 2,790.—A maritime town of Tasmania, on river Tamar, with 10,000 inh.

Lausanne, a town of Switzerland, cant. Vaud, on N. shore of lake of Geneva. Pop. 20,000.

Lawrence, St., a river and gulf of N. America.

Laybach, a city of Austria, prov. Carniola. Pop. 17,000.

Leamington, an inland watering-place of England, co. Warwick. Pop. 18,000.

Lebanon, a mountain-system of Syria, Turkey in Asia, running parallel to the Mediterranean coast.

Leeds, a manufacturing town of Yorkshire, W. Riding, on the river Aire, Pop. 207,000.

Leghorn, Ital. *Livorno*, a maritime city of Italy, on the coast of Tuscany. Pop. 80,000.

Leicester, a town and co. of England. The town, on river Soar, has 68,000 inhabitants.

Leipsic, an inland city of Germany, kingdom of Saxony. Pop. 78,000.

Leith, a seaport of Scotland, co. Edinburgh, on Firth of Forth. Pop. 33,600.

Leitrim, a co. of Ireland, prov. Connaught.

Lemberg, a city of Austria, prov. Galicia. Pop. 70,000.

Lena, a river of Siberia, flowing into the Arctic Ocean.

Leominster, a town of Herefordshire, on river Lug. Pop. 15,600.

Leon, an inland city of Spain, with 7,000 inh.

Lerwick, a seaport of Scotland, Shetland Islands, on island of Mainland. Pop. 3,000.

Lewes, a town of Sussex, on river Ouse. Pop. 9,700.

Leyden, (*Lugdunum Batavorum*), a commercial city of the Netherlands, prov. S. Holland. Pop. 37,000.

Liberia, a negro republic on the W. coast of Africa. Cap. Monrovia.

Lichfield, a cathedral city of England, co. Stafford. Pop. 6,800.

Liège, an inland city of Belgium, on the river Meuse. Pop. 96,000.

Liegnitz, a town of Prussian Germany, prov. Silesia. Pop. 14,000.

Lierre, a town of Belgium, prov. Antwerp. Pop. 14,000.

Liffey, a river of Ireland, flowing into Dublin Bay.

Lille, a manufacturing town of France, dep. Nord. Pop. 132,000.

Lima, the cap. city of Peru, S. Am.

Limerick, a city and co. of Ireland, prov. Munster. The city, on river Shannon, has 44,600 inh.

Limoges, a city of France, dep. Haute Vienne. Pop. 27,000.

Lincoln, a cathedral city of England, co. of same name. It stands on river Witham, and has 21,000 inh.

Linlithgow, a town and co. of Scotland. The town has 3,800 inh.

Linz, a town of Austrian Germany, prov. Upper Austria, on river Danube. Pop. 27,000.

Lipari Islands, a group in the Mediterranean, to the N. of Sicily.

Lisbon (*Olisipo*), the cap. of Portugal, on river Tagus. Pop. 275,000.

Lisburn, a town of Ireland, co. Antrim. Pop. 7,500.

Lisieux, a town of France, dep. Calvados. Pop. 11,500.

Liskeard, an inland town of England, co. Cornwall. Pop. 4,700.

Liverpool, a seaport of England, co. Lancaster, at mouth of river Mersey. Pop. 443,800.

Llandaff, a cathedral city of S. Wales, co. Glamorgan.

Loanda, a seaport town of W. Africa, S. of the equator, and the cap. of the Portuguese possessions in that region. Pop. 12,000.

Lodi, a city of W. Italy, on the river Adda. Pop. 21,000.

Loffoden Islands, a chain off the W. coast of Norway.

Loire, a river of France, flowing into the Bay of Biscay.

London, the cap. of the British empire, on river Thames. Pop. 2,800,000.

Londonderry, a maritime city and co. of Ireland, prov. Ulster. The city, on river Foyle, has 20,000 inh.

Longford, an inland co. of Ireland, prov. Leinster.

Loo-choo Islands, a group in the Pacific, E. of China.

Lorca, an inland town of Spain, prov. Murcia, with 48,000 inh.

L'Orient, a seaport town of France, dep. Morbihan. Pop. 19,000.

Loughborough, a town of Leicestershire, near river Soar. Pop. 10,800.

Louis, St., a town of W. Africa, at mouth of river Senegal.—A town of Missouri, U. S., on river Mississippi. Pop. 162,000.

Louisiana, one of the U. S. of N. America, bordering on the G. of Mexico.

Louisville, a town of Kentucky, U. S., with 75,000 inh.

Louth, a co. of Ireland, prov. Leinster.—A town of Lincolnshire, England. Pop. 10,500.

Lowell, a manufacturing town of Massachusetts, U. S., with 37,000 inh.

Lubeck, a seaport and free municipal city of N. Germany, on river Trave. Pop. 50,000.

Lucca, a city of Italy. Pop. 24,000.

Lucerne, a city, canton, and lake of Switzerland. The city, on river Reuss, at its issue from the lake, has 10,000 inh.

Lucia, St., an island in the W. Indies, belonging to Britain.

Lucknow, a city of Brit. India, prov. Oude, on river Goomtee. Pop. 300,000.

Ludlow, a town of Shropshire, on river Teme. Pop. 5,100.

Lunenburg, a town of N. Germany, kingdom of Hanover. Pop. 9,000.

Luxemburg, a fortified town of Germany, the cap. of a grand-duchy, attached to the kingdom of the Netherlands. Pop. 11,000.—A prov. of Belgium.

Lynn, or *King's Lynn*, a seaport of Norfolk, at mouth of river Ouse. Pop. 16,000.

Lyons (Lugdunum), a manufacturing city of France, dep. Rhone, at junction of rivers Saône and Rhone. Pop. 318,000.

Macao, a Portuguese town and settlement on the S. coast of China. Pop. 30,000.

Macarthy Island, an island in the river Gambia, W. Africa, belonging to Britain.

Macassar, a maritime town on the island of Celebes, E. Indies, belonging to the Dutch.

Madagascar, a large island in the Indian Ocean, divided from the African continent by the Mozambique Channel.

Madeira, an island off W. Africa, in the Atlantic Ocean, belonging to Portugal.

Madras, a maritime city of Brit. India, on Coromandel coast. Pop. 700,000.

Madrid, the cap. of Spain, on river Manzanares, an affluent of the Tagus. Pop. 476,000.

Maestricht, a fortified town of the Netherlands, prov. Limburg, on river Meuse. Pop. 26,000.

Magdeburg, a town of Prussian Germany, prov. Saxony, on river Elbe. Pop. 67,000.

Maidstone, a town of Kent, on river Medway. Pop. 23,000.

Maine, one of the U. S. of N. America, forming part of New England.

Majorca, the largest of the Balearic Islands, in the Mediterranean Sea.

Malabar, a maritime prov. of India,

Malacca, a town on W. coast of Malay peninsula, S.E. Asia, belonging to Britain.

Malaga (Malaca), a seaport of Spain, prov. Andalusia. Pop. 113,000.

Maldive Islands, an extensive archipelago in the Indian Ocean, W. of India.

Malo, St., a seaport of France, dep. Ille-et-Vilaine. Pop. 8,500.

Malta, an island in the Mediterranean, belonging to Britain. Cap. Valetta.

Managua, a town and lake of Central America, state of Nicaragua.

Manchester, a manufacturing city of Lancashire, England, on river Irwell. Pop. 440,000.

Manilla, the chief city of the Philippine Islands, on island of Luzon. Pop. 200,000.

Mannheim, a city of W. Germany, grand-duchy Baden, at junction of rivers Neckar and Rhine. Pop. 27,000.

Mantua, a city of Austrian Italy, on river Mincio. Pop. 30,000.

Maracaybo, a seaport of Venezuela, S. America. Pop. 15,000.

Margate, a seaport of Kent, on Isle of Thanet. Pop. 8,800.

Marquesas, a group of islands in the S. Pacific, under French dominion.

Marseilles (Massilia), a seaport of France, dep. Bouches-du-Rhône, on coast of Mediterranean. Pop. 261,000.

Martinique, an island of the W. Indies, belonging to France.

Maryland, one of the U. S. of N. America.

Massachusetts, one of the U. S. of N. America, forming part of New England.

Masulipatam, a seaport of Brit. India, Madras pres., at mouth of river Krishna. Pop. 28,000.

Matsmai, a seaport of Japan, island of Jesso. Pop. 50,000.

Mauritius, an island in the Indian Ocean, belonging to Britain. Cap., Port Louis.

Maynooth, an inland town of Ireland, co. Kildare. Pop. 2,000.

Mayo, a co. of Ireland, prov. Connaught.

Mazatlan, a seaport of Mexico, on the Pacific Ocean. Pop. 5,000.

Mecca, a city of Arabia, prov. El-Hedjaz. Pop. 45,000.

Mecklin, Fr. Malines, an inland city of Belgium, prov. Antwerp. Pop. 26,000.

Mecklenburg, a grand-duchy of Germany, consisting of two portions—M. Schwerin, and M. Strelitz.

Medina, a city of Arabia, prov. El-Hedjaz. Pop. 18,000.

Mediterranean Sea, the largest inland sea on the globe, connected with the

- Medway**, a river of England, co. Kent. It joins the estuary of the Thames.
- Meiningen**, an inland town of Germany, cap. duchy Saxe-Meiningen. Pop. 6,500.
- Meissen**, a town of Germany, kingd. Saxony. Pop. 9,500.
- Melbourne**, the cap. of Victoria, Australia, situated on the Yarra river, which enters Port Philip. Pop. 100,000.
- Memel**, a seaport of Prussia, on the Baltic. Pop. 10,000.
- Mentz**, or **Mayence**, an inland city of Germany, on the Rhine, grand-duchy Hesse-Darmstadt. Pop. 40,000.
- Merida** (*Emerita Augusta*), a town of Spain, prov. Estremadura, on river Guadiana. Pop. 5,000.
- Merioneth**, a co. of N. Wales.
- Mersey**, a river of England, flowing into the Irish Sea.
- Merthyr Tydvil**, a town of S. Wales, co. Glamorgan. Pop. 84,000.
- Messina** (*Messana*), a maritime city of Sicily, on strait of same name. Pop. 94,000.
- Metz**, a fortified town of France, dep. Moselle, and on river Moselle. Pop. 57,000.
- Mexico**, a country of America. Its cap. is the city of Mexico, with 170,000 inhabitants.
- Miako**, a city of Japan, near the S. coast of Nippon. Pop. about 500,000.
- Michigan**, one of the U. S. of N. America. — A large lake, one of the great chain belonging to the basin of the St. Lawrence.
- Middlesex**, the metropolitan co. of England.
- Middletown**, a manufacturing town of Lancashire, England. Pop. 9,800.
- Milan** (*Mediolanum*), a city of N. Italy, Lombardy, on the river Olona, an affluent of the Po. Pop. 219,000.
- Milford Haven**, an extensive estuary on the coast of Pembrokeshire, S. Wales. The town of Milford is on its shore.
- Minden**, a fortified town of Prussian Germany, prov. Westphalia, on river Weser. Pop. 13,000.
- Minorca**, one of the Balearic Islands, in the Mediterranean Sea.
- Minsk**, a town of European Russia. Pop. 15,000.
- Mirzapore**, a town of Brit. India, Bengal pres., on river Ganges. Pop. 80,000.
- Mississippi**, a river of N. America, flowing into the Gulf of Mexico. — One of the U. S. of N. America.
- Missouri**, a river of N. America, which joins the Mississippi. — One of the U. S. of N. America.
- Mocha**, a seaport of S. W. Arabia, prov. Yemen, on the Red Sea, now decayed.
- Modena** (*Mutina*), a city of Italy, lying S. of the Po. Pop. 32,000.
- Mogadore**, a seaport of Morocco, on the Atlantic coast. Pop. 10,000.
- Moghilev**, a town of European Russia, on river Dnieper, with 21,000 inh.
- Moldavia**, a principality of Europe, forming a dependency of Turkey; cap. Jassy.
- Moluccas**, a numerous group of islands in the E. Indian Archipelago.
- Monaghan**, an inland co. of Ireland, prov. Ulster.
- Mongolia**, a large country of Central Asia, within the Chinese Empire.
- Monmouth**, a town and county of England. The town, at junction of river Munnow with Wye, has 5,700 inh.
- Mons**, a town of Belgium, prov. Hainault. Pop. 20,000.
- Montauban**, a town of France, d. p. Tarn-et-Garonne. Pop. 16,500.
- Montenegro**, a mountainous tract on the W. border of European Turkey, near the Adriatic. Cetinje is its cap.
- Monte Video**, a maritime city of S. America, cap. republic of Uruguay. Pop. 46,000.
- Montgomery**, a town and inland co. of N. Wales. The town, near river Severn, has 1,270 inh.
- Montpellier**, a city of France, dep. Hérault. Pop. 38,000.
- Montreal**, a city of Canada, on river St. Lawrence. Pop. 65,000.
- Montrose**, a seaport of Scotland, co. Forfar. Pop. 14,500.
- Moravia**, a prov. of Austrian Germany.
- Morea**, a penins. of S. Europe, forming part of Greece.
- Moreton Bay**, an arm of the Pacific, on E. coast of Queensland, Australia.
- Morocco**, a country of N. W. Africa. The city of Morocco, its cap., has 100,000 inh.
- Moscow**, a city of European Russia, on river Moskva, with 386,000 inh.
- Mosoul**, a city of Turkey in Asia, on river Tigris. Pop. 40,000.
- Moulmein**, a seaport of Brit. India, Tenasserim provs. Pop. 18,000.
- Moulton**, a city of Brit. India, prov. Punjab, on river Chenab. Pop. 60,000.
- Mozambique**, a maritime city of E. Africa, on island of same name, belonging to Portugal. Pop. 6,000.
- Mullingar**, an inland town of Ireland, co. Westmeath. Pop. 5,300.
- Munich**, the cap. city of Bavaria, on river Isar. Pop. 148,000.
- Munster**, a prov. of Ireland.

Murcia, a city and prov. of Spain. The city has 109,000 inh.

Murray, a river of S. E. Australia, flowing into the Southern Ocean.

Muscat, a maritime city of S. E. Arabia, prov. Omaun. Pop. 60,000.

Mushed, an inland city of Persia, prov. Khorassan. Pop. 40,000.

Mysore, a city of S. India, the cap. of a native state, dependent on the Madras pres. Pop. 65,000.

Nagpore, an inland city of Brit. India, Bengal pres. Pop. 110,000.

Nairn, a town and co. of Scotland. The town, on river Nairn, has 3,400 inh.

Namur, a fortified city of Belgium, prov. same name, at confluence of rivers Sambre and Meuse. Pop. 23,000.

Nancy, a city of France, dep. Meurthe. Pop. 38,700.

Nankin, a city of China, on the Yangtze river. Pop. 400,000.

Nantes (*Condivicium*, aft. *Namnetes*), a commercial city of France, dep. Loire Inf., and near mouth of river Loire. Pop. 113,600.

Naples, a maritime city of S. Italy, on a bay of the Mediterranean. Pop. 417,000.

Napoli, or **Nauplia**, a seaport of Greece, on E. side of the Morea. Pop. 16,000.

Narbonne (*Narbo Martius*), a city of France, dep. Aude. Pop. 10,500.

Nassau, a duchy of W. Germany, cap. Wiesbaden.

Natal, a British colony in S. Africa, cap. Pieter-maritzburg.

Naxos, an island of the Greek Archipelago.

Neath, a town and river of S. Wales, co. Glamorgan. Pop. (of town) 6,800.

Negropont (*Eubœa*), an island of the Greek Archipelago.

Neilgherry Hills, a group in S. India, Madras presidency.

Nelson, a town and prov. of New Zealand, S. island.

Nepaul, a native kingdom of N. India, cap. Khatmandoo.

Nerbudda, a river of W. India, flowing into the Indian Ocean.

Neufchatel, a town, cant., and lake of Switzerland. The town has 8,000 inh.

Nevers, a town of France, dep. Nièvre, on river Loire. Pop. 14,300.

Nevis, an island of the Brit. W. Indies.

New Brunswick, a Brit. colony in N. America, cap. Fredericton.

New Caledonia, an island in the S. Pacific Ocean, belonging to France.

Newark, a town of Nottinghamshire, England, on river Trent. Pop. 11,500.

Newcastle-under-Lyme, a town of Staffordshire. Pop. 12,900.

Newcastle-upon-Tyne, (*Pons Ælii*), a seaport of Northumberland, England, on river Tyne. Pop. 109,000.

Newfoundland, an island and Brit. colony of N. America, cap. St. John.

New Granada, a confederated republic of S. America, cap. Sta. Fé de Bogotá.

New Hampshire, one of the U. S. of N. America, forming part of New England.

New Jersey, one of the U. S. of N. America.

New Orleans, a city of Louisiana, U. S., at mouth of Mississippi river. Pop. 170,000.

New Plymouth, a town of New Zealand, Taranaki prov.

Newport, a town of Monmouthshire, on river Usk. Pop. 23,000.

Newry, a town of Ireland, co. Down, near L. Carlingford. Pop. 6,200.

New South Wales, a Brit. colony in Australia, cap. Sydney.

New York, a city of the U. S. of N. America, cap. state of same name, on river Hudson. Pop. 814,000.

New Zealand, a group of islands in the S. Pacific Ocean, forming a Brit. colony; cap. **Auckland**.

Niagara, a river of N. America, connecting Lakes Erie and Ontario, and forming the stupendous Falls of Niagara.

Nicaragua, a city and republic of Central America; also a lake within the same region.

Nice (*Nicæa*), a maritime town of S. France, dep. Alpes Marit., on the Mediterranean coast. Pop. 35,000.

Nicobar Islands, a group in the B. of Bengal.

Nicolaiev, a town of European Russia, prov. Cherson, on river Dnieper. Pop. 45,000.

Nicolas, St. a manufacturing town of Belgium, prov. E. Flanders. Pop. 19,000.

Niger, or **Quorra**, a river of Central and Western Africa, flowing into the Gulf of Guinea.

Nijni-Novgorod, an inland city of Russia, at junction of rivers Oka and Volga. Pop. 30,000.

Nile, a river of Africa, flowing into the Mediterranean.

Nippon, the largest island of the Japan group.

Nismes (*Nemausus*), a city of France, dep. Gard. Pop. 57,000.

Norfolk, a maritime co. of England.

Norfolk Island, an island in the S. Pacific Ocean, E. of Australia.

North-Allerton, a town of Yorkshire, W. Riding. Pop. 4,700.

Northampton, a town and co. of Eng-

Northumberland, a maritime co. of England.

Norway, a country of Northern Europe, cap. Christiania.

Norwich, a manufacturing and cathedral city of England, co. Norfolk, on river Wensum. Pop. 74,400.

Nottingham, a town and co. of England. The town, on river Trent, has 74,000 inh.

Novara, a city of N. Italy, with 10,000 inh.

Nova Scotia, a penins. and Brit. colony of N. America, cap. Halifax.

Nova Zembla, a group of islands in the Arctic Ocean, N. of Russia.

Novgorod, an inland town of European Russia, near L. Ilmen. Pop. 9,000.

Nubia, a country of Africa, cap. Khartoom.

Nuremberg, or *Nürnberg*, a manufacturing city of Germany, kingdom of Bavaria. Pop. 63,000.

Obi, a river of Siberia, flowing into the Arctic Ocean.

Oder, a river of N. Germany, flowing into the Baltic Sea.

Odessa, a seaport of Russia, on the Black Sea. Pop. 104,000.

Ohio, a river of N. America, an affluent of the Mississippi. — Also, one of the U. S. of N. America.

Oldenburg, a grand-duchy of Germany. Cap. Oldenburg, with 8,000 inh.

Oldham, a manufacturing town of Lancashire, England. Pop. 72,000.

Olmutz, a town of Austrian Germany, prov. Moravia. Pop. 13,000.

Ontario, a lake of N. America, one of the great chain belonging to the St. Lawrence basin.

Oporto, a seaport town of Portugal, at mouth of river Douro. Pop. 80,000.

Oregon, one of the U. S. of N. America, on the Pacific coast.

Orenburg, a town of European Russia, on river Ural, with 18,000 inh.

Orinoco, a river of S. America, flowing into the Atlantic Ocean.

Orkney Islands (*Orcades*), a group lying to the N. of Scotland.

Orleans (*Genabum*, aft. *Aureliani*), a city of France, dep. Loiret, on river Loire. Pop. 50,000.

Ormuz, an island in the Persian Gulf.

Osnaburg, a town of N. Germany, kingdom Hanover. Pop. 12,000.

Ostend, a seaport town of Belgium, on the North Sea. Pop. 14,000.

Otago, a prov. of New Zealand, S. island. Ch. tn. Dunedin.

Oude, a prov. of Brit. India. Cap. Lucknow.

Owhyhee, or *Hawaii*, the largest of the Sandwich Is., Pacific Ocean.

Oxford, a cathedral city and university of England, at junction of rivers Churwell and Isis. Pop. 27,500.

Padstow, a seaport of Cornwall. Pop. 2,400.

Padua, a city of Austrian Italy, with 51,000 inh.

Paisley, a manufacturing town of Scotland, co. Renfrew. Pop. 47,000.

Palermo (*Panormus*), a maritime city of Sicily, with 186,000 inh.

Pamplona, a city of Spain, prov. Navarre, with 16,000 inh.

Panama, a city of New Granada, S. America, on S. coast of isthmus of Panama. Pop. 6,000.

Papua, or *New Guinea*, a large island in the E. Indies.

Para, a maritime city of Brazil, with 20,000 inh.

Paraguay, a river of S. America, one of the affluents of the Rio de la Plata. — An independent republic of S. America. Cap. Asuncien.

Paramaribo, the cap. of Dutch Guiana, S. America, on river Surinam. Pop. 15,000.

Parana, a river of S. America, an affluent of the Rio de la Plata.

Paris, the cap. city of France, on river Seine. Pop. 1,700,000.

Parma, a city of Italy, S. of the Po. Pop. 45,000.

Paros, an island of the Greek Archipelago.

Pasco, a mining town of Peru, S. America. Pop. 12,000.

Patagonia, a country of S. America, chiefly desert.

Patmos, an island of the Greek Archipelago.

Patna, a city of Brit. India, Bengal pres., on river Ganges. Pop. 284,000.

Patras, a seaport of Greece. Pop. 7,000.

Pau, a city of S. France, dep. Basses Pyrénées. Pop. 14,000.

Pavia, a city of N. Italy, on river Po. Pop. 25,000.

Peebles, a town and co. of Scotland. Pop. of town, on river Tweed, 2,000.

Pegu, a prov. of British India, E. of the B. of Bengal. Ch. tn. Rangoon.

Pekin, the cap. city of China, prov. Pe-chi-li, on river Pei-ho. Pop. 2,000,000.

Pelew Islands, a group in the Pacific Ocean. Lat. 8° N. long. 134° E.

Penang, or *Prince of Wales I.*, a Brit. settlement in the E. Indies, off W. coast of Malay peninsula.

Pennsylvania, one of the U. S. of N. America.

Penzance, a town in Cornwall, near the Land's End. Pop. 9,400.

Perm, a town of European Russia, on river Kama, with 10,000 inh.

Pernambuco, a seaport of Brazil, with 15,000 inh.

Persia, a country of Asia, cap. Teheran.

Persian Gulf, an arm of the Indian Ocean.

Perth, a city and co. of Scotland. The city, on riv. Tay, has 25,000 inh.

Peru, a country of S. America. Cap. Lima.

Perugia (*Perusia*), a city of central Italy, with 20,000 inh.—A lake of Italy, the ancient Trasimennus.

Peshawur, a city of Brit. India, N. W. of Punjab. Pop. 50,000.

Pesth, the cap. city of Hungary, on river Danube. Pop. 132,000.

Peterhead, a seaport of Aberdeenshire, Scotland. Pop. 7,500.

Petersburg, St., the cap. city of Russia, on river Neva. Pop. 520,000.

Peterwardein, a fortified town of Austria, prov. Slavonia, on river Danube. Pop. 5,000.

Petropaulovski, a seaport of Asiatic Russia, E. coast of Kamtschatka.

Philadelphia, the cap. city of Pennsylvania, U. S., on river Delaware. Pop. 568,000.

Philippine Islands, a group of the E. Indian Archipelago, belonging to Spain.

Pisa, a city of Italy, div. Tuscany, on river Arno. Pop. 21,000.

Pitcairn Island, a small island in the Pacific, lat. $25^{\circ} 4' S.$, long. $130^{\circ} 8' W.$

Pittsburg, a manufacturing town of Pennsylvania, U. S. Pop. 100,000.

Plata, La, or *Argentine Republic*, a confederation of S. American states, of which Buenos Ayres is the head.

Plata, Rio de la, a river (or rather estuary), of S. America, formed by the junction of the rivers Paraná and Uruguay.

Plymouth, a seaport of Devonshire, England. Pop. (with adjacent town of Devonport) 113,000.

Po (*Padus*, or *Eridanus*), a river of Italy, flowing into the Adriatic.

Poitiers (*Limonium*, aft. *Pictavi*), a city of France, dep. Vienne. Pop. 25,000.

Poland, a country of Central Europe, partitioned between Russia, Austria, and Prussia. Cap. Warsaw.

Polynesiá, a division of the globe

composed of the numerous islands in the Pacific Ocean.

Pondicherry, a maritime town of India, Coromandel coast, belonging to France. Pop. 40,000.

Pontefract, a town of Yorkshire, W. Riding. Pop. 5,300.

Poole, a seaport of Dorsetshire. Pop. 9,700.

Poonah, an inland city of Brit. India, Bombay pres. Pop. 75,000.

Popayan, an inland town of New Granada, S. America. Pop. 8,000.

Port au Prince, a seaport of Hayti, W. Indies. Pop. 30,000.

Portland, a seaport of Maine, U. S. Pop. 30,000.

Porto Rico, an island of the W. Indies, belonging to Spain.

Port Phillip, a bay on the S. coast of Victoria, Australia.

Portsmouth, a seaport and arsenal of England, co. Hants. Pop. 94,500.

Portugal, a country of Europe, cap. Lisbon.

Posen, a city and prov. of Prussian Poland. Pop. (of city) 51,000.

Potomac, a river of U. S., flowing into Chesapeake Bay, an arm of the Atlantic.

Potosí, an inland city of Bolivia, S. America. Pop. 13,000.

Potsdam, a city of Prussian Germany, prov. Brandenburg. Pop. 42,000.

Prague, a city of Austrian Germany, prov. Bohemia, on river Moldau. Pop. 143,000.

Presburg, a city of Hungary, on river Danube. Pop. 40,000.

Preston, a manufacturing town of Lancashire, on river Ribble. Pop. 83,000.

Prince Edward Island, an island and Brit. colony in the Gulf of St. Lawrence, cap. Charlotte Town.

Providence, a seaport of Rhode Island, U. S., with 50,000 inh.

Prussia, a kingdom of central Europe, cap. Berlin.

Punjab, a prov. of Brit. India, Bengal pres., comprehending part of the upper Indus and its tributaries.

Pyrenees, a chain of mountains lying on the borders of France and Spain.

Quebec, a city of Canada, on the St. Lawrence. Pop. 70,000.

Quentin, St. (*Augusta Veromandorum*), a town of France, dep. Aisne. Pop. 23,000.

Quito, the cap. city of Ecuador, S. America. Pop. 70,000.

Raab, a town of Hungary. Pop. 18,000.

Radnor, an inland county of S. Wales.

Ragusa, an inland town of Sicily. Pop. 21,000.—A maritime town of Austria, prov. Dalmatia, on the Adriatic. Pop. 5,000.

Ramsgate, a seaport of Kent. Pop. 11,800.

Rangoon, a seaport of Brit. India, prov. Pegu. Pop. 30,000.

Ratisbon, Germ. *Regensburg* (*Reginum*), a town of Bavaria, on river Danube. Pop. 23,000.

Ravenna, a city of Italy, near the Adriatic. Pop. 20,000.

Reading, the co. town of Berkshire, at junction of rivers Kennet and Thames. Pop. 25,000.—A town of Pennsylvania, U. S. Pop. 16,000.

Redruth, a mining town of Cornwall. Pop. 7,900.

Red Sea (*Erythræum Mare*), an arm of the Indian Ocean, lying between Africa and Asia.

Reggio (*Regium Lepidi*), an inland town of Italy, S. of the Po. Pop. 16,500.—(*Rhegium*), a maritime town of S. Italy, on Str. of Messina. Pop. 21,000.

Renfrew, a maritime co. of Scotland.

Reus, an inland town of Spain, prov. Catalonia. Pop. 28,000.

Revel, a seaport of Russia, on the Gulf of Finland. Pop. 15,000.

Rheims (*Durocortorum*, alt. *Remi*), a city of France, dep. Marne. Pop. 42,500.

Rhine (*Rhenus*), a river of W. Europe flowing into the North Sea.

Rhode Island, one of the U. S. of N. America.

Rhodes, an island of the Greek Archipelago, belonging to Turkey.

Rhone (*Rhodanus*), a river of S. Europe, flowing into the Mediterranean.

Richmond, a city of Virginia, U. S., on the James river. Pop. 38,000.—A town of Yorkshire, England, N. Riding. Pop. 4,200.—A town of Surrey. Pop. 7,400.

Riga, a seaport of European Russia, gov. Livonia, on river Dvina. Pop. 72,000.

Rimini (*Ariminum*), a town of Italy, on the Adriatic. Pop. 17,000.

Rio Janeiro, the cap. city of Brazil, S. America. Pop. 300,000.

Ripon, a cathedral city of Yorkshire, W. Riding, on river Yore. Pop. 6,100.

Rochdale, a manufacturing town of Lancashire, on river Roch. Pop. 38,000.

Rockfort, a seaport of France, on B. of Biscay. Pop. 17,000.

Rocheſter, a cathedral city of Kent, on river Medway. Pop. 16,600.

Rocky Mountains, a great chain stretching through N. America, in the

Rome (*Roma*), a city of Italy, the cap. of the Papal dominions, on river Tiber. Pop. 195,000.

Roscommon, a town and inland county of Ireland, prov. Connaught. Pop. (of town) 2,700.

Rosetta, a seaport of Egypt. Pop. 5,000.

Ross, a co. of Scotland, cap. Dingwall.—A town of Herefordshire, on river Wye. Pop. 3,700.

Rotherham, a manufacturing town of Yorkshire, W. Riding, on river Don. Pop. 7,600.

Rotterdam, a maritime city of the Netherlands, on river Meuse. Pop. 109,000.

Rouen (*Rotomagus*), a manufacturing city of France, dep. Seine Inf., and on river Seine. Pop. 102,000.

Roxburgh, a county of Scotland.

Russia, a country of Europe. The Russian empire embraces, besides, a large portion of Asia, with part of N. America. Cap. St. Petersburg.

Rutland, the smallest co. of England.

Sacramento, a river of California, U. S.

Sahara, a vast desert of N. Africa.

Saigon, a seaport and prov. of Farther India, recently acquired by France.

Salamanca (*Salmantica*), an inland city of Spain, prov. Leon, on river Tormes. Pop. 14,000.

Salem, a seaport of Massachusetts, U. S. Pop. 22,000.

Salerno (*Salernum*), a seaport of S. Italy, on the Mediterranean. Pop. 19,000.

Salisbury, a cathedral city of Wiltshire, on river Avon. Pop. 11,800.

Salonica (*Thessalonica*), a maritime city of European Turkey, on a gulf of the Archipelago. Pop. 70,000.

Saluzzo, a town of N. Italy. Pop. 15,000.

Salzburg, a city and prov. of Austrian Germany. The city, on river Salzach, has 17,000 inh.

Samara, a town of European Russia, on river Volga, with 5,000 inh.

Samarcand, a city of Independent Turkistan, khanat of Bokhara, on river Zerashan. Pop. 10,000.

Samos, an island of the Greek Archipelago.

Sana, an inland city of Arabia, cap. of Yemen. Pop. 4,000.

San Domingo, a seaport on S. coast of Hayti, W. Indies, cap. of Spanish portion of the island. Pop. 10,000.

Sandwich Islands, a group in the N. Pacific Ocean.

San Marino, a town of central Italy, forming an independent municipal state,

San Salvador, a city of Central America, cap. republic of same name. Pop. (of city) 30,000.

Santander, a seaport of Spain, on Bay of Biscay. Pop. 16,000.

Santiago, an inland city of Spain, prov. Galicia. Pop. 30,000.—The cap. of Chili, S. America. Pop. 90,000.—One of the Cape Verde Islands.

Saragossa (*Cæsar Augusta*), an inland city of Spain, on river Ebro. Pop. 30,000.

Saratov, a town of European Russia, on river Volga, with 42,000 inh.

Sarawak, a maritime prov. of Borneo, E. Indies.

Sardinia, an island in the Mediterranean, forming part of the kingdom of Italy. Cap. Cagliari.

Sassari, a town of Sardinia. Pop. 23,000.

Saxony, a kingdom of central Europe, forming one of the members of the Germanic Confederation, cap. Dresden.—Also a prov. of Prussian Germany.

Scarborough, a seaport of Yorkshire, N. Riding, on the German Ocean. Pop. 18,000.

Schaffhausen, a town and canton of Switzerland. The town, on the Rhine, has 7,800 inh.

Scheldt, a river of Belgium, flowing into the North Sea.

Schweitz, a town and cant. of Switzerland. The town has 5,200 inh.

Scilly Islands, a group lying off S. W. coast of Cornwall, at entrance of English Channel.

Scio, or *Khio* (*Chios*), an island of the Greek Archipelago, belonging to Turkey.

Scotland, the N. portion of Great Britain, cap. Edinburgh.

Scutari, a town of European Turkey, prov. Albania. Pop. 4,000.—A town of Asiatic Turkey, opposite Constantinople.

Sebastopol, a seaport of the Crimea, on its S. W. coast.

Segovia, an inland city of Spain, prov. Old Castile. Pop. 6,600.

Selkirk, a town and co. of Scotland.

Semlin, a town of Austria, prov. Slavonia, at junction of rivers Save and Danube. Pop. 10,000.

Senegal, a river of W. Africa, flowing into the Atlantic.

Senegambia, a country of W. Africa, embracing the region watered by the rivers Senegal and Gambia.

Sennar, a town of Nubia, on the Blue Nile. Pop. 4,000.

Seringapatam, a town of S. India, prov. Mysore, on river Cauvery. Pop. 30,000.

dependent on the Turkish Empire. cap. Krajojevatz.

Severn, a river of England, flowing into the Bristol Channel.

Seville (*Hispania*), a city of Spain, on river Guadalquivir. Pop. 152,000.

Seychelles, a group of islands in the Indian Ocean, belonging to Britain.

Shanghai, a seaport of China, situated near the mouth of the Yang-tsze river. Pop. 300,000.

Shannon, the largest river of Ireland, flowing into the Atlantic Ocean.

Sheerness, a seaport of Kent, on I. of Sheppey. Pop. 12,000.

Sheffield, a manufacturing town of Yorkshire, W. Riding. Pop. 187,000.

Sheppey, an island of Kent, between estuaries of Thames and Medway rivers.

Shetland Islands, a group forming the extreme north of the British Islands.

Shields (*North and South*), two seaport towns, divided by the river Tyne; the former, in Northumberland, has 9,600 inh.; the latter, co. Durham, 35,000.

Shikarpore, an inland town of British India, prov. Sind. Pop. 30,000.

Shiraz, an inland city of Persia, prov. Fars, now decayed.

Shrewsbury, the county town of Shropshire, on river Severn. Pop. 22,000.

Siam, a country of S. E. Asia; cap. Bang-kok.

Siberia, a large country of Asia, forming part of the Russian empire.

Sicily, an island in the Mediterranean, forming part of Italy.

Siena, an inland town of Italy, div. Tuscany. Pop. 22,000.

Sierra Leone, a peninsula and Brit. settlement on W. coast of Africa, N. of the equator; cap. Freetown.

Silesia, a prov. of Austrian Germany, cap. Breslau.

Simla, a town of Brit. India, situated in the hill country, N. E. of the Punjab.

Sinai, a mountain district in the N. W. of Arabia, between the Gulfs of Suez and Akaba.

Sinde, a prov. of Brit. India, Bombay pres. including the valley of the lower Indus.

Singapore, a Brit. settlement at S. extremity of the Malay peninsula. Pop. 80,000.

Skye, one of the Hebrides or Western Islands, Scotland, belonging to co. of Inverness.

Sleswig, a town and prov. of Denmark. The town has 11,000 inh.

Sligo, a town and co. of Ireland, prov. Connaught. The town has 10,400 inh.

Smolensk, a town of European Russia, situated on the Dnieper, with 11,000 inh.

Smyrna, a seaport of Asiatic Turkey, on a Gulf of the Archipelago. Pop. 150,000.

Socotra, an island off the E. extremity of Africa.

Soleure, a town and cant. of Switzerland. The town, on river Aar, has 5,400 inh.

Solway Firth, an arm of the Irish Sea, forming an estuary on the coasts of England and Scotland.

Somerset, a maritime co. of England.

Sophia, an inland town of European Turkey, prov. Bulgaria. Pop. 50,000.

Sound, a strait leading into the Baltic Sea, between Zealand and the coast of Sweden.

Southampton, a seaport of Hampshire, with 47,000 inh.

Spain, a country of S. Europe; cap. Madrid.

Spey, a river of Scotland, flowing into the North Sea.

Spitzbergen, a group of islands in the Arctic Ocean.

Staffa, an island of the Hebrides, famous for its basaltic cavern.

Stafford, a town and co. of England. The town, on river Sow, has 12,500 inh.

Staley Bridge, a manufacturing town of Cheshire, on riv. Tame. Pop. 25,000.

Stanford, a town of Lincolnshire, on river Welland. Pop. 8,000.

Stettin, a seaport of Prussian Germany, on river Oder. Pop. 64,000.

Stirling, a town and co. of Scotland. The town, on river Forth, has 11,400 inh.

Stockholm, the cap. of Sweden, on L. Mælar. Pop. 112,000.

Stockton, a seaport of Durham, at mouth of river Tees. Pop. 13,000.

Stoke-upon-Trent, a town of Staffordshire, the chief place in the 'Pottery' district. Pop. 101,000.

Stourbridge, a town of Worcestershire, on river Stour. Pop. 8,000.

Stralsund, a seaport of Prussian Germany, on the Baltic. Pop. 24,000.

Strasbourg (Argentoratum), a city of France, on the Rhine. Pop. 82,000.

Stromboli (Strongyle), one of the Lipari Islands, distinguished as an active volcano.

Stroud, a manufacturing town of Gloucestershire. Pop. 35,500.

Stuttgart, the capital city of Würtemberg, Germany. Pop. 56,000.

Styria, a prov. of Austrian Germany. Cap. Gratz.

Suez, a seaport of Egypt, at head of Red Sea. Pop. 5,000.

Suffolk, a maritime co. of England.

Sumatra, an island of the E. Indies.

Sunderland, a seaport of Durham, at mouth of river Tees. Pop. 85,000.

Superior, a lake of N. America, the largest of those belonging to the St. Lawrence basin.

Surat, a maritime city of Brit. India, Bombay pres., at mouth of river Tapti. Pop. 133,000.

Surinam, a river of Dutch Guiana, S. America.

Surrey, an inland co. of England.

Sussex, a maritime co. of England.

Sutherland, a maritime co. of Scotland.

Swaborg, a naval arsenal of European Russia, on G. of Finland.

Swan River, a river of Western Australia, flowing into the Indian Ocean.

Swansea, a seaport of Glamorgan, S. Wales, at mouth of river Tawe. Pop. 42,500.

Sweden, a country of N. Europe. Cap. Stockholm.

Switzerland, a country of central Europe. Cap. Berne.

Sydney, the cap. of New South Wales, Australia, on Port Jackson. Pop. 100,000.

Syra, an island of the Greek Archipelago.

Syracuse (Syracusa), a seaport of Sicily, on E. coast. Pop. 14,000.

Syria, a country of W. Asia, forming part of the Turkish dominions.

Szegedin, a town of Hungary, on river Theiss. Pop. 36,000.

Tabreez, an inland city of Persia, prov. Azerbaijan. Pop. 80,000.

Tagus, a river of Spanish penins., flowing into the Atlantic.

Talavera de la Reyna, a town of Spain, prov. New Castile, on river Tagus. Pop. 6,000.

Tambov, a town of European Russia, with 20,000 inh.

Tampico, a seaport of Mexico, on the Caribbean Sea. Pop. 7,000.

Tamworth, a town of Staffordshire, at junction of rivers Tame and Aner. Pop. 4,300.

Tangier (Tingis, or Cæsarea), a seaport of Morocco, on the strait of Gibraltar. Pop. 10,000.

Tapti, a river of India, flowing into the Indian Ocean.

Tarragona (Tarraco), a seaport of Spain, prov. Catalonia. Pop. 13,000.

Tarsus, a city of Asiatic Turkey, in S. E. of Asia Minor. Pop. 7,000.

Tashkend, a town of Independent Turkestan, with 80,000 inh.

Tasmania, an island and British colony, lying S. of the Australian continent. Cap. Hobart Town.

Taunton, a town of Somersetshire, on river Tone. Pop. 14,600.

Taurus, a chain of mountains in S. of Asia Minor.

Tavoy, a town, prov., and river of Brit. India, E. of B. of Bengal.

Tay, a river of Scotland, flowing into the North Sea.

Tchernigov, a town of European Russia, on river Desna, with 7,500 inh.

Teheran, the cap. of Persia. Pop. 12,000.

Teignmouth, a seaport of Devonshire, at mouth of river Teign.

Tenasserim Provinces, a tract on the E. side of the B. of Bengal, forming part of British Burmah.

Teneriffe, one of the Canary Islands.

Tennessee, one of the U. S. of N. America.

Tessin, or **Ticino**, a river and canton of Switzerland.

Tewkesbury, a town of Gloucestershire, at confluence of rivers Severn and Avon. Pop. 5,800.

Texas, one of the U. S. of N. America, bordering on the G. of Mexico.

Thames, a river of England, flowing into the German Ocean.

Thanet, an island, forming the N. E. extremity of Kent, formed by the river Stour.

Thiess, a river of Hungary, an affluent of the Danube.

Tibet, a country of central Asia, forming part of the Chinese empire.

Tiber, a river of central Italy, flowing into the Mediterranean.

Tierra del Fuego, a group of islands forming the S. extremity of S. America.

Tiflis, a city of Asiatic Russia, S. of the Caucasus, on river Kour. Pop. 30,000.

Tilsit, a town of Prussia, on river Memel. Pop. 13,500.

Timbuctoo, a town of central Africa, near the Niger river. Pop. 13,000.

Tipperary, a town and co. of Ireland, prov. Munster. Pop. of town, 9,500.

Titicaca, a large lake of S. America, on borders of Peru and Bolivia.

Tobago, one of the islands of the Brit. W. Indies.

Tobolsk, a city of W. Siberia, at junction of rivers Tobol and Irtysh. Pop. 20,000.

Tokat, an inland town of Asiatic Turkey, E. part of Asia Minor. Pop. 40,000.

Toledo (**Toletum**), a city of Spain, prov. New Castile, on river Tagus. Pop. 13,600.

Tomsk, a town of W. Siberia, with 9,000 inh.

Tonquin, a country of S. E. Asia, emp. of Anam. Cap. Kachao.

Tornea, a town of European Russia, at head of G. of Bothnia.

Toronto, a city of Western (or Upper) Canada, on lake Ontario. Pop. 60,000.

Toula, an inland town of European Russia, with 35,000 inh.

Toulon, a seaport and arsenal of France, dep. Var, on the Mediterranean. Pop. 85,000.

Toulouse (**Tolosa**), an inland city of France, dep. Haute-Garonne, and on river Garonne. Pop. 72,000.

Tournay, a manufacturing town of Belgium, on river Scheldt. Pop. 34,000.

Tours (**Cæsarodunum**, aft. **Turones**), an inland city of France, dep. Indre et Loire, and on river Loire. Pop. 26,000.

Tranquebar, a seaport of Brit. India, Madras pres., on B. of Bengal. Pop. 23,000.

Transylvania, a prov. of Austrian empire, to the S. E. of Hungary. Cap. Klausenburg.

Trapani, a seaport of Sicily. Pop. 27,000.

Travancore, a native state of India, dep. on Madras pres. Its cap. is Trivandrum.

Trebizond (**Trapezus**), a seaport of Asiatic Turkey, on the Black Sea. Pop. 40,000.

Trent, a city of Austrian Germany, prov. Tyrol, on river Adige. Pop. 13,000.—A river of England, flowing into the Humber estuary.

Treves (**Augusta Trevirorum**), a city of Prussian Germany, Rhine prov., on river Moselle. Pop. 21,000.

Treviso, a town of Austrian Italy. Pop. 19,000.

Trichinopoly, a town of Brit. India, prov. Carnatic, on river Cauvery. Pop. 30,000.

Trieste, a seaport of Austria, prov. Illyria, at head of Adriatic. Pop. 66,000.

Trinidad, an island of the Brit. W. Indies.

Tripoli (**Oea**, or **Augusta Felix**), a maritime city of N. Africa, the cap. of a native state, dependent on Turkey. Pop. 25,000.—(**Tripolis**), a seaport of Syria, with 16,000 inh.

Troy, a town of New York, U. S., on river Hudson.

Troyes (**Augustobona**, aft. **Tricasses**), an inland town of France, dep. Aube, on river Seine. Pop. 26,000.

Truro, a mining town of Cornwall, with 11,000 inh.

Tuam, a cathedral city of Ireland, co. Galway. Pop. 4,500.

Tucuman, a town and prov. of La Plata, S. America. The town has 12,000 inh.

Tunbridge Wells, an inland watering-place of Kent. Pop. 13,800.

Tunis (**Tunes**), a maritime city of N. Africa, cap. of an independent state, under the rule of a bey. Pop. 150,000.

Turin (*Augusta Taurinorum*), the cap. of kingdom of Italy, on river Po. Pop. 180,000.

Turkestan, a large region of central Asia, part of it under the dominion of China; the remainder forming several independent khanats.

Turkey, an extensive empire, embracing provinces in Europe, Asia, and Africa. Cap. Constantinople.

Tuscany, a division of Italy, on W. side of peninsula. Cap. Florence.

Tver, an inland town of European Russia. Pop. 20,000.

Tweed, a river of Scotland, flowing into the North Sea.

Tyne, a river of England, flowing into the North Sea.

Tynemouth, a seaport of Northumberland, at mouth of river Tyne. Pop. (with N. Shields) 34,000.

Tyre, or *Tsoor* (*Tyrrus*), a seaport of Syria, Mediterranean coast. Pop. 3,000.

Tyrol, a prov. of Austrian Germany.

Tyrone, an inland co. of Ireland, prov. Ulster.

Ulm, a town of S. Germany, kingdom Wurtemberg, on river Danube. Pop. 22,700.

Ulverstone, a town of Lancashire, with 6,600 inh.

Upsal, a city of Sweden, N. W. of Stockholm. Pop. 5,000.

Ural, a chain of mountains on the border of Europe and Asia.—Also, a river flowing into the Caspian Sea.

Uruguay, or *Banda Orientale*, a country of S. America; cap. Monte Video.—Also, a river flowing into the estuary of the La Plata.

Usk, a river of S. Wales, flowing into the Bristol Channel.

Utah, a territory of the U. S., N. America, W. of the Rocky Mountains; cap. Great Salt Lake City.

Utica, a city of New York, U. S., on river Mohawk. Pop. 20,000.

Utrecht, a city and prov. of the Netherlands. Pop. (of city) 54,000.

Valdivia, a seaport of Chili, S. America, with 7,000 inh.

Valencia, a city of Spain, near the Mediterranean coast, on river Guadalaviar. Pop. 145,000.

Valenciennes, a manufacturing town of France, dep. Nord, on river Scheldt. Pop. 20,000.

Valetta, the cap. of Malta. Pop. 60,000.

Valladolid, a city of Spain, prov. Old Castile. Pop. 30,000.

Valparaiso, a maritime city of Chili, S. America. Pop. 60,000.

Vancouver Island, an island and

British colony off the West coast of N. America: cap. Victoria.

Venezuela, a country of S. America: cap. Caracas.

Venice, a maritime city of Italy, on the Adriatic. Pop. 118,000.

Vera Cruz, a seaport of Mexico, on the Gulf of Mexico. Pop. 8,000.

Vermont, one of the U. S. of N. America.

Verona, a city of Austrian Italy, on river Adige. Pop. 59,000.

Versailles, a town of France, dep. Seine et Oise, S. W. of Paris. Pop. 30,000.

Vesuvius, a volcano of Italy, near Naples.

Viatka, an inland town of European Russia, with 7,000 inh.

Vicenza, a city of Austrian Italy. Pop. 33,000.

Victoria, a Brit. colony of Australia: cap. Melbourne.—A river of Australia, on N. W. coast.—A town on I. of Hongkong.—A town on Vancouver I.

Vienna (*Vindobona*), the cap. of Austrian Empire, on river Danube. Pop. 476,000.

Vigo, a seaport of Spain, on the Atlantic. Pop. 6,000.

Vincent, St., one of the Brit. W. India Islands.

Virgin Islands, a group in the W. Indies, three of them belonging to Britain, the remainder to Denmark.

Virginia, one of the U. S. of N. America, cap. Richmond.

Vistula, a river of Europe, flowing into the Baltic Sea.

Volga, a river of Europe, flowing into the Caspian Sea.

Voronej, a town of European Russia, near river Don, with 25,000 inh.

Wakefield, a town of Yorkshire, W. Riding, on river Calder. Pop. 23,300.

Wales, the western portion of S. Britain.

Wallachia, a principality of S. E. Europe, dependent on the Turkish crown. Cap. Bukharest.

Walsall, a manufacturing town of Staffordshire, with 37,700 inh.

Warrington, a town of Lancashire, on river Mersey. Pop. 26,000.

Warsaw, the cap. of Poland, on river Vistula. Pop. 162,000.

Warwick, an inland town and co. of England. Pop. of town (on river Avon) 10,500.

Washington, the federal capital of the U. S., on river Potomac. Pop. 61,000.

Waterford, a seaport town and co. of Ireland. The town, on river Suir, has 23,000 inh.

Waterloo, a village of Belgium, near Brussels, famous for battle, 1815.

Wear, a river of England, flowing into the North Sea.

Wednesbury, a manufacturing town of Staffordshire. Pop. 15,000.

Weimar, a city of central Germany, cap. grand-duchy Saxe-Weimar-Eisenach. Pop. 11,500.

Wells, a cathedral city of Somersetshire. Pop. 4,600.—A town of Norfolk. Pop. 3,100.

Welshpool, a town of Montgomeryshire, N. Wales, on river Severn. Pop. 7,300.

Weser, a river of Germany, flowing into the North Sea.

Westmoreland, a county of England.

Westphalia, a prov. of Prussian Germany.

Wexford, a town and co. of Ireland. The town, at mouth of river Slaney, has 12,000 inh.

Whitby, a seaport of Yorkshire, N. Riding, on North Sea. Pop. 12,000.

Whitehaven, a seaport of Cumberland, on the Irish Sea. Pop. 18,800.

Wicklow, a town and co. of Ireland. The town, on river Vartry, has 3,400 inh.

Wigan, a manufacturing town of Lancashire. Pop. 37,000.

Wight, Isle of (Vectis), an island in the English Channel, off coast of Hampshire.

Wigtown, a town and co. of Scotland. Pop. of town, on Wigton B., 2,000.

Wilna, a town of European Russia, on riv. Wilia, with 51,000 inh.

Wiltshire, an inland county of England.

Winchester (Venta Belgarum), a city of Hampshire, on river Itchin. Pop. 14,800.

Windsor, a town of Berkshire, on river Thames. Pop. 9,500.

Wisbeach, a town of Cambridgeshire, on river Nen. Pop. 9,200.

Wisconsin, one of the U. S. of N. America.

Wolverhampton, a manufacturing town of Staffordshire. Pop. 60,000.

Woolwich, a town and arsenal of Kent, on riv. Thames. Pop. 41,000.

Worcester, a cathedral city and co. of England. The city, on river Severn, has 31,000 inh.

Worms, a city of W. Germany, grand-duchy Hesse-Darmstadt, on river Rhine, Pop. 11,000.

Wurtemberg, a kingdom of S. Germany; cap. Stuttgart.

Wurzburg, a city of Bavaria, on river Main. Pop. 36,000.

Wye, a river of S. Wales, flowing into the Bristol Channel.

Xeres, de la Frontera, a town of Spain, prov. Andalusia. Pop. 33,000.

Xucar, a river of Spain, flowing into the Mediterranean.

Yakutsk, a town of E. Siberia, on river Lena. Pop. 7,000.

Yang-tsze-kiang, a great river of China, the longest in the Old World. It flows into the Pacific.

Yarkand, a city of Chinese Turkestan. Pop. 50,000.

Yarmouth, a seaport of Norfolk, at mouth of river Yare. Pop. 34,800.

Yemen, a country in S. W. Arabia; cap. Sana.

Yenesei, a river of Asia, flowing into the Arctic Ocean.

Yeovil, a town of Somersetshire. Pop. 7,900.

York (Eburacum), a cathedral city of England, the cap. of Yorkshire, on river Ouse. Pop. 40,000.

Yucatan, a penin. of Central America, forming part of Mexico: cap. Merida.

Zambesi, a river of S. Africa, flowing into the Indian Ocean.

Zante, one of the Ionian Islands.

Zanzibar, a town and island of E. Africa.

Zealand, a Danish island at the entrance of the Baltic Sea.

Zeeland, a prov. of the Netherlands.

Zug, a town, cant. and lake of Switzerland. The town has 3,000 inh.

Zurich, a town, cant. and lake of Switzerland. The town, at N. extremity of lake, has 20,000 inh.

Zuyder Zee, an arm of the German Ocean, on coast of Netherlands.

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